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SIXTY YEARS OF SERVICE AND PROGRESS IN THE LOUISIANA STATE MEDICAL SOCIETY*

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NEW ORLEANS

INTRODUCTORY OBSERVATIONS ON TRANSITION FROM PAST TO PRESENT

The generous terms with which the Louisiana State Medical Society has chosen to dedicate its sixty-first annual meeting to the commemoration of the sixtieth anniversary of my medical career, affects me deeply in grateful appreciation of an honor so signally and graciously conferred. I particularly prize this dedication, because as is told in the citation, the birth and history of this Society coincides so closely with the chronology of my own professional life that the two may be regarded as virtually contemporaneous. My medical life began with my graduation in medicine in April, 1880, sixty years this April. Our mother society was born a year before, in 1879, sixty-one years ago. Though not a graduate of medicine and not a member of our then nascent organization, I was one of several interns of the Charity Hospital who were privileged to attend its birth. I am also one of the few who have survived the strong buffettings of fate and the stormy seas over which our good ship has sailed during the six decades that we have travelled together; and in justice to my loyalty, be it said, without losing faith at any time in her seaworthiness or doubting that she would reach a safe anchorage in the home port of her assured prosperity. I have been reminded by your historic dedication that I was at one time your captain, trusted with the steering wheel in 1895, and piloted her fourteenth annual cruise without mishap. It is also recorded that we finally landed in port with a cargo profitable enough in knowledge to encourage our stockholder members to continue their investment in our corporation, the Louisiana State Medical Society.

The memories of the year in which I served the Society as its executive officer are as vivid now as they were then, and the graciousness of your favor and the aid received from my associates and fellows in the accomplishment of my presidential tasks, remain indelible and linger as a precious perfume, fresh and fragrant to animate me on this occasion.

It would appear from the evidence of the calendar that I had already survived twenty hot summers before the Society was born. I am therefore enjoying the privilege of a seniority of twenty years over and above our foundation, that permits me to visualize the long distance we have travelled since we began the great trek which has brought us here today, to enjoy together the thrill of accomplishment such as that given to the hardy pioneer who, after sixty years of arduous toil, finds himself in the land of promise and of plenty.

It is indeed a significant fact in evidence of the extraordinary pace of modern scientific accomplishment, and of the speed attained by contemporary medicine, that in the course of these six decades that we have

*Address delivered at the sixty-first anniversary of the Louisiana State Medical Society, on April 23, 1940.

travelled together, the whole of our Art and Science has been revised and revolutionized; our methods of practice have radically changed, even to the language that we speak, which would have been incomprehensible to our members in 1879, were they here to join in the scientific jargon of our debates. Indeed, what a prodigious distance we have travelled in the six decades that intervene between 1879-1940! Only the few who have participated in the medical life of this period,—the most prolific in scientific discovery and momentous in the history of the medical world in general, and of American medicine in particular,—can realize the immensity of these sixty years in units of discovery and achievement.

Medicine, profiting by the world energies that have been set in motion by the revelations of the physical, chemical and biologic sciences of the twentieth century, has travelled with a vertiginous pace which, when contrasted with the past, can only be conceived by comparing the speed of the old doctor's horse and buggy with that of the automobile and the aeroplane. In this flight over the years, we who have lived in this Southern section of the country, have witnessed a succession of changes in medical thought and practice which to the practitioner of even thirty years ago would seem no less than a mirage such as that which startles the fevered brain of the lost wanderer in a tractless desert where he sees sparkling streams and umbrageous trees under which to rest and quaff his parched throat.

Just think what these sixty years have done for this organization—the Louisiana State Medical Society! A mere glance at the annual volume of transactions, as they appear in the New Orleans Medical and Surgical Journal, our official organ, will show how its constitution and administration have changed and are changing, to meet the requirements of an ever expanding, progressive and representative medical democracy. The present meeting attests not only to the great expansion of the organization, but also to the restless agitation prevailing in the profession in anticipation of greater changes in the present system of medical relief required to provide and make available the most effective methods of medical and surgical care equally to all classes of the population, and particularly to the so-called underprivileged or low income groups.

It is also evident that at no time has the general public displayed greater interest and sympathy in the socio-economic as well as scientific problems that are now engaging our attention.

Again, it is a significant fact in evidence of the extraordinary pace of modern scientific accomplishment and the great speed attained by contemporary medicine that whole new departments of knowledge should have been planted, matured and fructified in phenomenal luxuriance, all within the space of a man's life time.*

*Such departments as roentgenology, radiology and Curie-therapy, local and regional anesthesia, inhalation anesthesia, intravenous anesthesia, neurosurgery, chemo-hemotherapy, endocrinology, gastroscopy, and innumerable other innovations in surgery, sanitation and the specialties too long to mention, which I had occasion to review with special reference to Louisiana before this society in an address on Medical Progress (1895-1926) at the Monroe annual meeting, in April, 1926.[1]

And to have witnessed this magical transition from the old to the new, is the privilege that my robust longevity has given me to enjoy. While I by no means claim that this privilege of age is unique or a particular qualification for your favor, I am, none the less happy that I am here to rejoice with you in the progress accomplished and to revive memories of an early professional life, when, with all the vigor and enthusiasm of youth, I sought new ways and new means by which to expand the sphere of the doctor's usefulness in his endless campaign for the suppression of pain and the cure of disease. It is indeed a great privilege to have participated and lived through the formative period of new arts and benificent scientific discoveries, and still preserve sufficient vision to look on the far distant past from the summit of the height attained and gaze from this vantage point, at still greater peaks beyond, that remain un-

[1]New Orleans M. &. S. J., 79:5, 1926.

scaled, and still waiting for younger and more venturesome pioneers!

REMINISCENCES OF 1895 AND THE SPEAKER'S PRESIDENCY

The dedication of the sixty-first meeting of the Louisiana State Medical Society, evidently written by a thoughtful friend who is biographically inclined, recalls at least four events in the course of my presidency that are worthy of notice. The first is the passage by the Legislature of Act 49, in 1894, which created the State Board of Medical Examiners, thereby giving the Society an official status as an arm of the State in regulating the practice of medicine in Louisiana.[2] The second, was the publication of the first printed and complete medical directory of Louisiana as a supplement to our transactions. The production of this work was indispensable as a tool for the successful organization of the profession of the state. It involved an immense amount of correspondence which kept me busy as its editor and publisher during the greater part of my administration. There was then no Polk's Directory or that of the American Medical Association to help us out, as at present, in obtaining a dependable census and directory of the medical profession of the state.[3] Another event of importance was the identification of the obscure, long-continued fevers which prevailed in Louisiana and the South generally,—known as typho-malarial, thermic and various other names,—as an atypical typhoid, which had challenged the diagnostic ability of the ablest clinicians in the country at a time when bacteriology and serology of typhoid and malaria were still groping in their infancy. The identity of this fever was finally and indisputably established as typhoid by my own clinical observations and those of an expert committee of internists and pathologists which I had appointed.[4]

My growing interest in blood vessel surgery was also evidenced in the reports of a considerable number of unusual aneurysms and vascular wounds particularly, the first case of intra-aneurysmal suture in 1888, that I contributed to the proceedings of the Society for that year.[5]

DR. A. B. MILES

In 1894, a great loss was sustained by the medical profession of Louisiana in the untimely death of Dr. A. B. Miles, the thirteenth president of the Louisiana State Medical Society, and my immediate predecessor in that office. It is a sad commentary on the crude state of prophylactic sanitation at the time, when we consider that so able a doctor, the chief surgeon of the greatest hospital in the South, should have died of typhoid, an avoidable and preventable infection. At that time there was no Widal test, no typhoid vaccine.

Dr. Miles was surgeon in chief of the Charity Hospital; a very successful and judicious surgeon, who commanded universal respect and was the first, among other accomplishments, to perform successful laparotomies for gunshot wounds of the abdomen. A very modest man of unpretentious beginnings, but great natural dignity, he was undoubtedly one of the best loved men in the profession of his day. The oration pronounced over his remains in the grand portico of Charity Hospital by his friend and pastor, that divinely eloquent preacher, the Rev. Dr. Palmer, in the presence of a great multitude, was one of the most impressive and sincerely eloquent tributes ever delivered in New Orleans over a medical man.

It has always seemed to me a singular decree of fate that I, who had no intimacy with Miles, but who had for him a genuine respect and admiration and wished him so earnestly to live,—should have been called to succeed him in the three posts which have exercised the most important influence

[2]See Executive Presidential address and minutes, Appendix C., Trans. La. State Med. Society, 15:435, 1894.

[3]Appendix G., Trans. La. State Med. Society, 15:493, 1894.

[4]The long continued fevers of Louisiana that resist quinine. Trans. La. State Med. Society, 1885, 7:80, 1885. Remarks on the continued fevers of Louisiana, Trans. L. S. M. S., 15:254, 1894. Med. News, Phila., 65:666, 1894.

[5]Notes of cases illustrating surgical lesions of the vascular system. Trans. La. State Med. Society, 15:286, 1894. Med. News, Phila., 53:462, 1888.

in shaping my professional life—Demonstratorship of Anatomy, the Presidency of the Louisiana State Medical Society, the Professorship of Surgery in the Medical Department of the Tulane University of Louisiana,—in all of which it seems to me I was destined to continue and complete some conspicuous achievement which he had begun.

When I took his place in the operating theater at Charity Hospital or in the lecture room, I always felt timid and in doubt that I could ever approach his admirable example of imperturbable serenity and prudence in the operating room, and felt really hopeless of success in possessing the magnetic attraction and confidence that he inspired in all who came in contact with him. The operating theater, named after him, which was built at the Charity Hospital in the first year that I succeeded him in the Chair of Surgery (1894-95), justly renews a tribute to his outstanding merit, in the Miles Amphitheater of the new Charity Hospital, just completed.

1895—THE INAUGURAL MEETING VIVIDLY RECALLED

These early associations and memories of my presidency which are recalled by your reminiscent dedication have led me somewhat out of the historic path that I had intended to follow at the outset of my remarks, so much so, that I now must retrace my steps to a much earlier period in the history of our Society, in fact to the day when I was privileged to attend its birth in April, 1879,—sixty-one years ago. I was then 19 years young, and an undergraduate intern of the Charity Hospital; one of the first class elected (1877-78) by competitive examination in the first year of the triumphant democracy of Louisiana under Governor Nicholls, following the downfall of carpet-bag rule. I was also probably the youngest of the many spectators who attended the birth of our Society. Despite the march of sixty-one years that intervene between that date and this, I remember the meeting and most of the men from the city and country who were present, and who, almost to a man, have long since disappeared. The meeting was held in the main lecture room on the ground floor of that stately old Greek temple on Common Street which had been built expressly to house the newly created Medical Department of the University of Louisiana, in 1837. This has long disappeared to make way for the Tulane theaters and other buildings since demolished, that gave not even the shadow of an idea of the architectural beauty of that vanished first Esculapian temple consecrated to medical education in Louisiana. It was an unusual occasion. A very considerable audience of city and country physicians, many of them newly constituted delegates, were in attendance; attracted probably by the novelty of a new medical society arising out of the ashes of its long extinguished predecessors. The community, still in mourning, had barely recovered from the horrors and afflictions of the disastrous epidemic of yellow fever which had swept over the city in 1878, prostrating over 27,000 of its inhabitants, killing 5,000, besides terrorizing the panic stricken, financially ruined people, paralyzing all the city's commerce, traffic and industry; and, in fact, suspending all the activities of the communities in which it prevailed or threatened with its approach.

FACTORS THAT HASTENED THE ORGANIZATION OF THE STATE SOCIETY

Baffled and seemingly helpless in the presence of this deadly and uncontrollable foe; exhausted, impoverished and discouraged, the doctors who had survived the actual contact with the yellow fever peril, the endless vigils and constant drain upon their strength, and the harrowing tax upon their courage and their sympathies, were anxious for comradeship, mutual communion and that interchange of thought, confidences and emotions that the collective experience of the mass in a common peril leads human beings, like wild creatures of the wilderness, to huddle together oblivious of their savage instincts, and of whatever rivalries or antagonisms that separated them before overtaken by a common catastrophe!

DR. CHAILLÉ THE FOUNDER; STATE MEDICINE, HIS ENDURING LEGACY TO THE SOCIETY

This was undoubtedly a favorable moment for the organization of a medical society which appealed, not only for city, but for statewide cooperation, and, it was in response to this unusual and undefinable appeal for mutual comfort and support, that the best elements of the profession gathered from diverse parishes of the state to found the same State Medical Society which holds us in her warm embrace at this moment. Apart from the great interest in the meeting, a large number in the audience had been attracted by the prospect of a timely and stirring speech, worthy of the reputation of the orator of the day, who was none other than Dr. Stanford E. Chaillé, my revered teacher, the renowned professor of physiology of the Medical School, universally recognized as the most forceful speaker in the profession of the South,—who had chosen "State Medicine and Medical Organization" as the theme for the annual discourse. Dr. Chaillé was then in his forty-ninth year and at the height of his physical and mental activities, his impressive face, indicative of the intellectual aristocrat that he was, his fine resonant voice, accurate, logical and, at times, impassioned sentences, interspersed with witty commentaries and apt comparisons, eloquent but always free from mannerisms and artificial poses,—was always captivating and convincing in his appeal for his fundamental thesis, viz, organization, cooperative effort and concerted action in promoting the interests of "State Medicine," a term which he had devised and defined as the "application by the State of medical knowledge to the common weal; embracing every subject for the comprehension of which the legislative and executive authority of the government are indispensable." He classified State Medicine into four great subdivisions, namely, the management of public institutions for the sick and infirm; medical education and medical licensure; medical jurisprudence, including the qualification of medical experts in insanity and crime; the functions of coroners, preventive medicine including State and Parish Boards of Health, and vital statistics. This was surely an amazing document, not only for the encyclopedic mass of facts which it contained but for the analytic bibliography of medicine as it applied to legislation in all the states and foreign countries. It was not only an address, and the finest of its kind in our literature,—a literary masterpiece,—but a guide or *vade mecum* for the benefit of the doctors, lawyers and statesmen interested in medical legislation. It served as a basis for a petition of the State and Orleans Parish Societies to the Constitutional Convention, held in New Orleans, in 1879. It won the admiration of the most eminent lawyers of that period; the only criticism was that of Judge Manning, of the Supreme Court of Louisiana, who remarked while praising it, that it was *fifty years ahead of our civilization!* A remark that proved true because, even now —sixty-one years since its adoption by the Convention of 1879—we are still waiting for the execution of no less than six of the eleven specifications submitted for enactment by Dr. Chaillé's legislative committees. But this society cannot forget that the Convention of 1879 did adopt Article 178 of the Constitution of 1879, which was reenacted in 1898, prescribing that the "General Assembly shall provide for the interests of State Medicine in all its departments." This mandatory provision for State Medicine was unprecedented in 1879 and of such great importance, as Dr. Chaillé so often remarked, "that this service of our society should not pass into oblivion."

Dr. Chaillé was the vigilant and hard worked shepherd of this and the Orleans Parish Societies from 1877 to 1886—in fact the author of the first constitution of this and all the Parish Societies; indeed, the father of all legislation which has grown out of the ten years of constant and tireless labor and thought that he devoted to erecting the foundation on which we stand today.

I have dwelt at some length upon the inaugural meeting of our State Society because I am one of the few living who can recall quite vividly—at least, as I do, the superb role that Dr. Chaillé played on that

occasion and during the first ten years of the foundation when the whole life of the organization was centered in him; many, like myself, attending because we always found it stimulating and intellectually profitable, to hear him and be near him. The great epidemic of yellow fever I experienced as an intern at the Charity Hospital in 1878, served as the scenario of a great drama of human affliction which left me, as one of those stricken by its touch, with an image of the undying frightfulness of Yellow Jack, the Ogre of the Tropics!

POLITICAL CONDITIONS PREVAILING IN LOUISIANA IN 1878—THEIR INFLUENCE UPON MEDICAL INSTITUTIONS

The fact that the foundation and very existence of this society and that of its affiliate, of Orleans Parish, are due to the delivery of Louisiana from the tyranny and odious bondage of carpet-bag rule, and that it is to the same liberating revolt of the Democracy in Louisiana that I am indebted for my internship at the Charity Hospital in April, 1877, since it was only then that internship could be obtained by competitive examination and not by political preferment,—makes the prospect of a return to the merit system in Louisiana, under Governor Jones, a cheering thought which finds particularly agreeable expression in the general applause that has greeted his appearance here tonight.

* * *

GREETINGS TO GOVERNOR-ELECT JONES—CRUSADER FOR HONEST GOVERNMENT; CHAMPION OF REFORM

As a Louisianian and one of the oldest members of the Louisiana State Medical Society, I am glad of the opportunity offered by the presence of Governor Sam Jones, our honored guest, to add my cordial salutations to the enthusiastic greetings of his host of friends in the medical profession who welcome his coming to this meeting as the manifestation of a friend in hearty sympathy with the aims and purposes of our organization,—an organization which stands for the medical profession of Louisiana in all that is best in its scientific activities and humanitarian ideals.

Governor Jones:* As a citizen and fellow Louisianian, I rejoice at your election to the supreme executive office of the state as a governor pledged to the service of the people,—pledged to their service not only by your public commitments, but your own intimate convictions. Believing with you in strict adherence to the principles of an honest, *bona fide* constitutional government, based upon the efficient functioning of the three coordinated, but *independent* legs of the vital tripod of government,—the executive, legislative and the judicial,—we salute you as the harbinger of a new era of honest, efficient, just and prosperous State government, free from the graft, spoliation, vice, crime and corruption, which in the last dozen years have been fastened on our body politic, as hideous excrescences on the face of our fair State. We trust in your special skill in political cosmetics, to remove these ugly blemishes, bloodlessly but radically, when you open your new sanitarium at Baton Rouge for their treatment.

Please let me say in passing, that you need not worry when you start operating, that our Licensing Board will molest you, or anyone of us will charge you with the illegal practice of medicine. You also may be sure that when you operate on the "lame ducks" of Louisiana's political aviary that no one will be allowed to deduct your fees.

HOPE FOR DEPOLITICALIZATION OF HOSPITALS

It is now too early and unfair to tax your strength and attention with the story of the medical problems which for years and years have clamored for relief from the strangling hands of previous administrations, thus far unavailingly and almost hopelessly, until your election as the champion crusader for honest government, gave us,—the friends of reform,—a cheering intimation that the day would soon come when the spoils system would end. Yes, when the shameless abuses of the Jacksonian political doctrine that "to the victor belong the spoils" would cease to exploit our state

*Due to a previous urgent appointment Governor Jones left before hearing these remarks which, in his absence, were addressed to the president, Dr. Barber.

hospitals and public institutions for the payment of political debts, or for rewarding of "faithful workers for the cause," or provide steady berths for the kith and kin of the administration.

The reaction and revolt of the public against this century-old, deeply rooted and disgraceful practice has led to the reorganization of the federal service and laid the foundation for the "civil service reform acts," which have been adopted by many states to protect their public servants from the aggression of changing and merciless political factions. But while civil service is gradually spreading over the country, Louisiana politicos have remained adamant and impenetrable to moral suasion!

UNIQUE NON-PARTISAN ADMINISTRATION OF GOVERNOR HALL AT CHARITY HOSPITAL (1912-1916)

The literature of medicine in relation to the State (State Medicine) is enormous and is growing steadily in its manifold and varied phases; the example of political abuse in the administration of the hospitals and eleemosynary institutions of the state, previously quoted, is only a sample of the many problems still waiting satisfactory solution. In this connection it is significant and shameful that in the course of the twenty-seven gubernatorial administrations that have ruled the state, from 1877 (under Governor Nicholls) to 1940, with the election of Governor Sam Jones (an interval of sixty-three years), there is no administration *except one* that adhered even in principle, to civil service rules in dealing with its salaried offices. The exceptional administration referred to was that of the lamented Governor L. E. Hall, of honored memory (in office 1912-1916) who was the only governor during this long period, who kept his promise (to committees of the Medical Staff and alumni of the Charity Hospital) not to politicalize the Hospital by appointment of a partisan board or by utilizing the Hospital appointments for political patronage, as his predecessors had done openly and consistently, and his successors, likewise, with even more assurance and undisguised authority.

The success of Governor Hall's administration still remains unique and unchallenged in the records of the Charity Hospital as the most harmonious, progressive and productive of good for the hospital of any previous administration in its long and uneven history!

HOPE FOR CIVIL SERVICE

We feel confident in Governor Jones' fulfillment of his pledges to eliminate the spoils system, graft and nepotism from his administration. On the other hand we believe in his fairness and sense of justice, recognizing and protecting merit wherever he may find it; not displacing or eliminating competent and worthy men and women in responsible and highly specialized administrative and technical functions in medical institutions, merely to accommodate or oblige the demands of exigent political creditors.

Governor Jones knows now that the organized medical profession of Louisiana, as represented by this organization is patriotic and loyal to its principles and, regardless of party differences, is 100 per cent behind him in any plan or effort that may require the cooperation of the medical profession for the welfare of the State in the service of its people.

In the meantime, it behooves us,—all the friends of medical reform,—to wait until our much overworked Governor-elect be relieved of his most pressing obligations before facing him with our manifold, ever present, but long neglected problems. Quoting from an editorial in one of the daily papers most devoted to Governor Jones' and to our common cause, I would say:

"We are not here to tell Sam Jones how good he is. All of us know how good he is. Don't try to serve him a lot of boloney, but make it your duty, make it the duty of every citizen of this State to help him to carry out his pledges" for it is only by carrying out his pledges to their full verification that Louisiana may again expect to meet her sister states with a clean and smiling face.

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SPEAKER'S CONTRIBUTION TO THE LOUISIANA STATE MEDICAL SOCIETY: PROPOSED ELECTION REFORM

The exceptional distinction which you have chosen to commemorate the sixty years of my official entry into the medical profession and of my membership in the Louisiana State Medical Society, has made me eager to show my appreciation of the compliment by proving that despite the sixty years that have worn away my youth, my interest in our Society's welfare has not abated, nor my mental vigor declined so far, that I could not contribute some added bit of research in medical organization which might benefit this Society now or sometime, in the progress of its expanding evolution. Preoccupied by this thought, I have made a comparative study of the different methods of electing the executive personnel of scientific societies in which all political methods of election are practically eliminated,—and finally, after considerable time and study, have arrived at the conclusions which appear in a report submitted to the House of Delegates at its meeting, Monday, April 22, 1940, where its future will be determined by the Executive Committee of the Society. Whatever happens to this document, I trust it will at least serve as a tribute of my ever faithful interest in the progress and welfare of organized medicine in Louisiana, as represented by our Society.

The political agitation of this State, consequent upon the excitement of the recent gubernatorial campaigns has suggested a discussion of the *"physician as a citizen,"* or, *"the doctor in politics,"* as a timely topic for an address on this occasion. I have done this, but will reserve the address for another less crowded occasion, since my own reactions to politics are, I believe, quite apparent in the preceding paragraphs.

EPILOGUE

Finally, I beg your indulgence for taking so much of the time allotted for my talk to matters reminiscent of episodes related to my personal experience in my sixty years' membership in this society; episodes, which I could multiply a hundredfold under other more appropriate circumstances. You must not, however, blame me altogether if I have been too loquacious, since you should know that even the most innocent and steady old man cannot fail to become egocentric and lose his balance when titillated by the many nice pettings and flattering speeches that have come to crown my harmless antiquity. In further apology for the abuse of so many frequent references to myself, I will seek a shield behind the reactions of my oft quoted master-teacher, Dr. Chaillé, when placed in similar circumstances. "There is so much of that which I have thus far said, which offends me by the use of so many big I's and references to myself, that I am reminded of a criticism of the German Emperor, of whom it was said, that his every speech was limited to his *Me* and *Myself* and *God.*" Should any of you criticize the present speaker by declaring that, worse than the Emperor, I made no appeal to God, but trusted myself to *me, myself,* I would merely remind you that most people besides the Kaiser and myself, find their *"me, myself,"* the most fascinating topic to themselves, though usually, the most wearisome to everyone else.

To avoid still further transgressions upon your indulgence, I will now close with renewed thanks and congratulations on the unsurpassed success of the present meeting.

LIVER DISEASES*

A SYMPOSIUM

ETIOLOGY AND PATHOGENESIS

WILLIAM H. HARRIS†
NEW ORLEANS

It is evident that the presentation of the etiology and pathogenesis of diseases of the liver, in the brief time allotted, is quite impracticable. A proper consideration of these phases of any one such disease would require more than the assigned period. Due apology is, therefore, offered for the "hit and run" or "high point" data that are herewith presented. It appears more log-

*Read before the Orleans Parish Medical Society March 11, 1940.

†From the Department of Pathology, School of Medicine, Tulane University of Louisiana.

ical to offer a brief general analysis of the assigned topic rather than to make any effort at detail which would prove both futile and tiresome.

The liver is, of course, one of the largest parenchymatous or functional organs in the host. As a factory of metabolic activity, it is of varied and stupendous extent. Any general description of its gross and microscopic anatomy leads us into a labyrinth too extensive to traverse but in which at least two important features pertaining to altered physiology and disease deserve emphasis.

1. Traveling up its biliary pathways, the intralobular sanctuary is entered in which the primary biliary radicles are formed intercellularly in the hepatic cords. These constitute the source of the vast biliary system. The impediment or infection of this great tributary arrangement presents very tangible instances of both secretory and cellular derangements from which many disease processes ensue.

2. The portal system, with its most extensive circulatory origin from the gastrointestinal canal and its splenic connection, form at once a source of great physiologic activity by means of its expansive redistribution throughout the liver parenchyma. It is to be further realized that although the comparatively small hepatic artery is directly impulsed by the heart, this great portal system is truly venous in its flow through the liver wherein functions are performed. This forms a direct contrast to the circulation of other important organs such as the brain, lungs, kidneys, and pancreas, wherein a strong, pulsating arterial intake exists. While but relatively little analysis of this fact has been made, it is evident that its vital functions require the comparatively sluggish and copious venous circulatory intake.

It must be appreciated that this great venous flow carries both waste material as well as food pabulum primarily into close intimacy with the functioning liver cells through the intralobular sinuses before being returned to the general circulation via the hepatic vein. Therefore, the detoxifying functions, the metabolic and storage capacity of modified food absorption are emphasized and made practical by this shunting or side-tracked circulation into the hepatic structure. Figure 1 shows a schematic graph of intralobular biliary tract origin and portal system termination. Figure 2 shows an injected depiction of the portal system and hepatic venous return both in the normal and obstructed circulation.

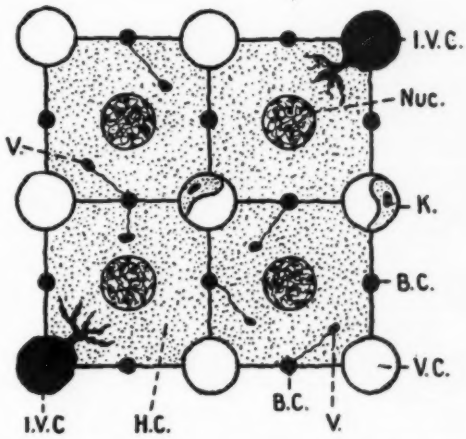

Fig. 1. Schematic graph of four liver cells to show: V. C., vascular capillaries; B. C., bile capillaries; I. V. C., injured vascular capillaries; V., bile vacuole; K., Kupffer cell. (From Wright's Applied Physiology, published by the Oxford University Press, London, 1929.)

Fig. 2. Left, injected portal vein (dark) and hepatic vein (light) branches in normal organ. Right, evidences of circulatory obliteration. (From A. H. McIndoe, Arch. Path., 5:23, 1938.)

Because of these assignments by nature, there is no organ in the body that presents such a variety of physiologic functions as does the liver. It seems in order, therefore, at least to enumerate the more important of the liver functions inasmuch as

disturbances thereof constitute the clinical manifestations of the many disease processes.

ENUMERATION OF HEPATIC FUNCTIONS

Bile formation
Formation and destruction of red blood cells
Metabolism of:
  Protein (deamination)
  Fat
  Carbohydrate
Heat Production
Antitoxic and protective (detoxication)
Blood volume regulation
Coagulation of blood
Fibrinogen production
Iron and copper storage
Reticulo-endothelial activity (Kupffer cells)

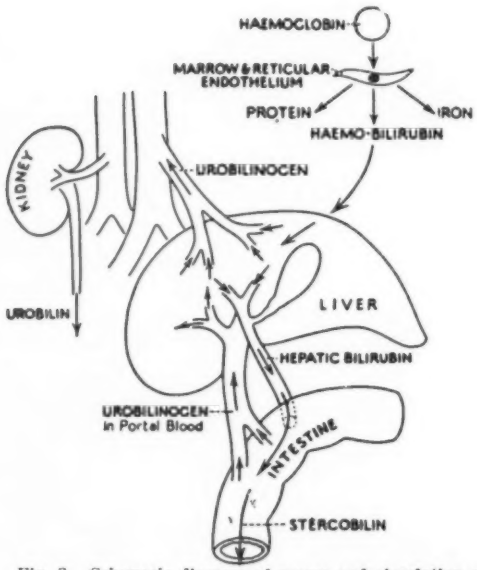

Fig. 3. Schematic diagram of source and circulation of biliary factors. (From Dible and Davie's Pathology, published by Messrs. J. and A. Churchill, London, 1940.)

To touch upon the etiology and pathogenesis of diseases of the liver, it is essential primarily to name the more important of these and to endeavor to group them as far as practical. A distinctive or clear-cut classification is somewhat difficult because of the intermingling and concomitant histopathologic alterations that so frequently coexist. As a matter of fact because of the great likelihood of parenchymatous injury of this extensive organ, many of its lesions or diseases are secondary or part of general systemic disturbances, infectious or otherwise. This is in part due to a combined systemic and portal circulatory intake as well as other factors that have been mentioned.

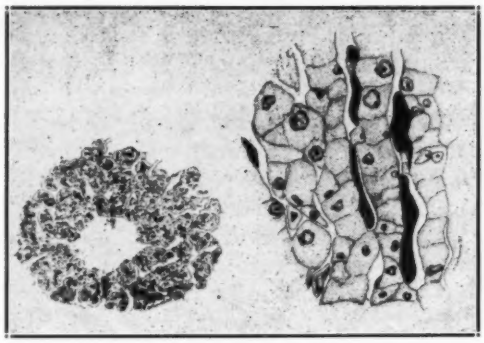

Fig. 4. Left, iron storage in endothelium demonstrated with Berlin blue stain. Right, glycogen storage in liver cells demonstrated with Best's carmine stain. (From Weiss' Diseases of the Liver, Gallbladder, Ducts and Pancreas, published by Paul H. Hoeber, Inc., New York City, 1935.)

RETROGRADE METAMORPHOSIS

Degenerations and Infiltrations

  Albuminous
  Fatty
  Amyloid
  Hyaline

Necrosis

  Focal
    Central
    Midzonal
    Peripheral
  Massive
    Acute yellow atrophy

Pigmentation

  Malaria
  Hemosiderosis
  Hemochromatosis
  Argyria
  Carbon
  Bile
    Bilirubin
    Biliverdin

INFLAMMATIONS

Acute

  Non-suppurative

- Suppurative
  - Portal
  - Hepatic
  - Biliary passages
  - Pylephlebitis
    - (Appendix)
  - Pseudo-abscess
    - (Amebic)

Chronic Interstitial or Fibrosis

- Cirrhosis
  - Laënnec-atrophic
  - Obstructive biliary
  - Reparative following necrosis
    - Toxic
    - Poisonings (phosphorus, arsenic, mercury, chloroform, cinchophen, impurities of carbon tetrachloride)
  - Hanot's hypertrophic biliary (disputed)
  - Wilson's disease
  - Banti's disease (splenic anemia)

HETEROLOGOUS

Specific Infections

- Tuberculosis
- Syphilis
  - Diffuse
  - Gumma
  - Cirrhosis
    - (Heper lobatum)
- Tularemia
- Actinomycosis

Leukemias

- Lymphoid
- Myeloid
- Von Gierke's disease
  - (glycogenosis)

Parasitic and Cystic Disease

- Simple obstruction
  - (congenital)
- Echinococcus
- Coccidium oviforme
- Flukes

Endocrines

- Thyroid
- Pancreas
- Pituitary
- Adrenal

Neoplasia

- Primary
- Metastatic

Anomalies

- Congenital
- Pressure

ETIOLOGY

In regard to the causative factors of certain of such diseases, an enumeration must necessarily include the micro-organisms that produces a specific disease. On the other hand, such agents represent only a small proportion of the incidence of diseases in this organ.

The etiologic factors can be, to some extent, classified in the following groups:

Specific micro-organisms:

- Various pyogens
- Treponema pallidum
- B. tuberculosis
- B. tularense
- Actinomycetes
- B. welchii
- Leptospira icterohaemorrhagiae (Weil's disease)
- Yellow fever virus
- Malaria, ameba, and various other parasites (echinococcus)

Toxins of Micro-organism and Various Infectious Agents

- B. typhosus
- Pneumococcus
- B. diphtheriae
- B. influenzae and other such systemic infections

Chemical Poisons

- Arsenic
- Mercury
- Chloroform
- Phosphorus
- Cinchophen
- Products of carbon tetrachloride
- Argyria

Absorptive Abnormal Products and Excess of Normal

- Pregnancy
- Suppurative bone lesions
- Intestinal obstruction
- Dietary disturbances

In this can be included altered functions or changes produced by the endocrines, thyrotoxicosis in particular, but also glycogenic storage as related to the pancreas, adrenal and pituitary glands.

Circulatory
- Central cirrhosis
- Chronic passive congestion or "nut-meg liver"
- Portal obstruction
- Biliary impediment

Unknown Origin or So-called "Idiopathic"
- Certain of the cirrhoses, von Gierke's, Wilson's and Banti's disease, also the leukemias and neoplasia.

PATHOGENESIS

This subject is again so far reaching in its scope and detail that only generalities can be mentioned.

Primarily, liver cell disturbance or injury constitutes the focal point of attention. The metabolic capacities of anabolism and katabolism—or of formative or secretory nature—may be disturbed by various abnormal factors without primary cellular alteration. In other words, the nuclear and protoplasmic activities may be altered through imperceptible changes producing a pathologic physiology or malfunctioning. From this phase, mild gradation of cell change ranging up to complete cellular destruction incorporating karyolysis, rhexis, and pyknosis of the important nuclear units may occur, thereby presenting a range extending from mild dysfunction to complete loss of physiologic activity.

Such altered or destructive changes caused by the various toxic moieties or abnormal secretory factors often constitute the process of pathogenesis or evolution of pathology for many of the enumerated diseases. Examples of this are the degenerative changes, including the various forms of focal necrosis, or even organ destruction as seen in acute yellow atrophy. Naturally, within these changes would be included the biliary retention or alterations, the glycogenic disturbances and all other such correlated factors.

The pathogenesis of pyogenic invasion and abscess formations with primary necrosis, inflammatory reaction and accumulated neutrophilic cell response needs no explanation. In this connection, it is in order to contrast the so-called "amebic abscess" which in reality is only a pseudo-abscess. It represents a massive histolysis of liver structure produced, through variously discussed manners, by emboli of the *Endameba histolytica* carried by the portal system from intestinal lesions. It is only when secondary bacterial invasion occurs that true pus is formed.

The pathogenesis of simple atrophic cirrhosis forms in itself an interesting point of discussion. Some contend it is purely a reparative process following in the wake of liver cell injury and destruction. This certainly applies to central or "nut-meg" cirrhosis. On the other hand evidences of a true interstitial inflammation with cellular infiltration, connective tissue hyperplasia, and new bile duct formation are clearly evident in many specimens. Time does not permit of a detailed analysis of this interesting question, nor of the many other diseases wherein the pathogenesis is of value. Such noteworthy examples serve to demonstrate various sequence abnormalities.

SUMMARY

Perhaps the one factor in connection with cause and pathogenesis that might be stressed, is again to emphasize the unusual or unique portal circulation. Herein, a venous circulatory return from the extensive intestinal coils, propelled only indirectly or by a vis a tergo from the heart, and forming thereafter a chief functioning intake, is finally redistributed through capillaries or sinuses in intimacy with the functioning cells of a most versatile organ. Through this extraordinary arrangement, nature seems to broadcast or signal out the diversity of character and the great importance to the human mechanism of liver function. The vast and expansive navigation system, the onslaught of the variety of cargo, both toxic and constructive that is transported, bespeak a more important receiving, manufacturing and distributing center than is, perhaps, ordinarily appreciated. The liability to injury and great significance of such is *prima facie* evident.

There is set forth herein an effort at a general analysis and organized arrangement of cause and formative processes of

diseases of the liver, the summary of which, it is hoped, may form a suitable base or preamble to the subsequent presentations of this symposium.

THE DIFFERENTIAL DIAGNOSIS OF LIVER DISEASE AND THE CLASSIFICATION OF JAUNDICE

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AND
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A discussion of liver disease which makes any pretense to completeness should really include a consideration of the entire biliary tract and of such related organs and structures as the duodenum, the stomach, the spleen and the portal system. Indeed, it ought also to encompass a description of the disease processes occurring in almost every branch of medicine. The liver, in addition to being the largest organ in the body, plays a very important role in the majority of the important metabolic processes. Since such a comprehensive discussion is impossible outside of a textbook or system of medicine, this paper will be limited to those diseases in which the liver, *per se*, is the chief structure involved. It will further be limited to a discussion of the important differential diagnostic points of these diseases, and of jaundice, which is perhaps their most prominent characteristic.

DIAGNOSTIC CONSIDERATIONS

The diagnosis of hepatic disease is not simple. It is only in those persons who are far advanced in the disease and beyond therapeutic aid that classical signs appear. Unlike the diagnosis of many other diseases, neither history nor physical examination supplies any great amount of helpful information during the first week or two. Extensive liver disease may coexist with few localizing symptoms. Prominent localizing symptoms of liver disease may exist with no general manifestations. Furthermore, many false impressions have come to be accepted as facts and further complicate the situation. For example, the adage that painless, causeless, progressive jaundice means carcinoma of the head of the pancreas with biliary obstruction is not much more than 50 per cent correct.[1] Historical facts may furnish clues, but they supply no conclusive evidence.

Although complete physical examination is essential for the acquisition of facts regarding the role of the liver in any given case, again the diagnostic information obtained early in the disease is conspicuous by its absence. Little more than jaundice, increase in size and shape of the liver and spleen, and the presence or absence of pain over the organ itself, are found on examination except in well advanced cases.

The laboratory methods employed in the differential diagnosis of liver disease are usually considered in the determination of the etiologic factor concerned in the production of jaundice.

THE ANATOMY AND PHYSIOLOGY OF THE LIVER

In order to comprehend the pathogenesis of liver disease and of its chief symptom, jaundice, a brief review of the anatomy of

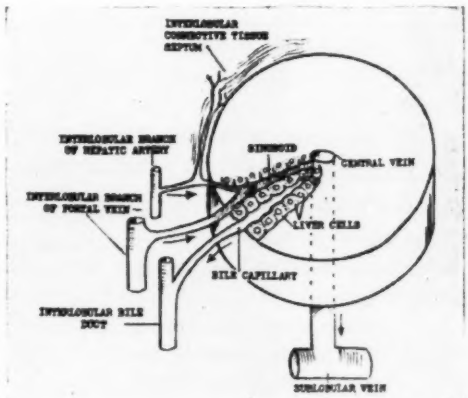

Fig. 1. Diagram of the hepatic circulation. Two Kupffer cells shown in a sinusoid. (From Best and Taylor's Physiological Basis of Medical Practice, published by The Williams and Wilkins Company, Baltimore, second edition, 1939.)

the liver is necessary. The structure of the organ and the hepatic circulation are set forth diagrammatically in figure 1.[2] Brief-

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ly, the blood supply of the liver comes from two sources, the portal circulation and the hepatic artery, which is a branch of the celiac axis. The blood from these two sources collects in the sinusoids of the liver and empties into the central vein of the lobule, whence it is drained into the sublobular veins and finally into the hepatic veins which enter the vena cava.

The cells of the reticulo-endothelial system, which line the sinusoids of the liver, form part of the bilirubin in the body from the non-ferruginous part of the hemoglobin molecule and then pass it on into the liver cells. The bile pigments are excreted into the bile capillaries, to be collected into the interlobular bile ducts. These ducts form the hepatic duct, which empties into the gallbladder.

Although not all of the functions of the liver are as yet comprehended, those which are known demonstrate its role in other physiologic processes of the body. They may be classified as follows:

FUNCTIONS OF THE LIVER[2,3]

1. The formation of bile acids and bile pigments.
2. The secretion of bile.
3. Carbohydrate metabolism.
   Deamination.
   Amino acid synthesis.
   Urea, uric acid and hippuric acid synthesis.
4. Protein metabolism.
5. Detoxication.
6. Fat metabolism.
7. Fibrinogen production.
8. Elaboration of cholesterol from the blood.
9. Formation of vitamin A from carotene and storage of vitamin B.
10. Blood volume regulation.
11. Iron and copper metabolism.
12. Storage and metabolism of erythrocyte-maturing factor.
13. Blood formation in the embryo.
14. Phagocytic activity of the reticulo-endothelial cells.
15. Production of heparin.
16. Heat production.

THE PATHOLOGIC PHYSIOLOGY OF JAUNDICE

Although the classification of jaundice which was proposed by McNee[4] in 1923 was based on the misconception that bilirubin differs in different types of jaundice, it is still rather generally accepted because of its simplicity. The classification presented by Rich[5] in 1930 is far more accurate from the standpoint of physiologic mechanism: It has never won wide acceptance, however, perhaps because it is more complicated. For simplicity, therefore, the classification of McNee is used in this discussion.

According to McNee, part of the bilirubin in the body is formed in the cells of the reticulo-endothelial system which line the venous sinusoids of the liver. It is then passed on to the liver cells, in which it may possibly be changed. The bile pigments are excreted into the bile capillaries, whence they pass, in turn, into the bile ducts and later into the portal tract.

On the basis of McNee's concept, icterus may develop under any of the following circumstances:

1. When bile pigment which is formed by the reticulo-endothelial cells passes through the hepatic cells into the bile tract, wherein an obstruction exists.

2. When, due to damage of the polygonal cells, the bile pigment carried to them by the endothelial cells is unable to enter them. Under these circumstances the bilirubin passes directly along the hepatic venous radicles into the general circulation. It is also conceivable that the obstruction may be only partial.

3. When there is excessive destruction of the red blood cells and too much bilirubin is formed for the polygonal cells to handle. In such circumstances some pigment may pass normally into the bile capillaries and color the feces, while the excess may pass straight through the hepatic vein into the circulation and produce jaundice.

4. When, in addition to damage and disordered function of the polygonal cells, there is also obstruction of the bile ducts, such as occurs, for instance, in cholangeitis. In such circumstances some pigment might pass directly into the circulation through

the hepatic vein and some might pass through the polygonal cells, to be reabsorbed later because of the existing obstruction.

Jaundice, on the basis of these possible circumstances, may be roughly classified as:

1. Obstructive hepatic jaundice.
2. Hemolytic jaundice.
3. Toxic and infective hepatic jaundice.
4. A combination of any two or more of these forms.

TESTS OF LIVER FUNCTION

Because of the manifold functions of the liver and because of its important role in extrahepatic pathologic states, no single test of function is adequate to determine the type of liver disease existing in a given case.

The most important tests of liver function are:[2,3,6,7]

1. Bile pigment metabolism
   - Icterus index
   - Van den Bergh
   - Urobilinogen
2. Excretory
   - Bromsulphalein
   - Bilirubin
   - Rose bengal red
3. Carbohydrate metabolism
   - Levulose tolerance
   - Galactose tolerance
4. Detoxication and protein metabolism
   - Quick hippuric acid test[8]
   - Cinchophen[9]
   - Takata-Ara[10]
5. Storage and metabolism of erythrocyte-maturing factor.
6. Bleeding, clot formation and contraction.
   - Quick prothrombin time[11]
   - Ziffren (et al.) bedside test[12]
   - Ivy (et al.) bleeding time[13]
   - Boyce serum volume index[14]

PRINCIPLES AND INTERPRETATION OF LIVER FUNCTION TESTS

TESTS RELATIVE TO BILE PIGMENT METABOLISM

1. *Icterus Index.*—Principle: Determination of increase in the bilirubin content of blood serum as compared to 1:10,000 solution of potassium dichromate, which is taken as the standard color.

Interpretation: Normal 4°-6°; latent jaundice 6°-15°; clinical jaundice above 15°.

2. *Van den Bergh.*—Principle: The test is based on the assumption that hyperbilirubinemia resulting from disease of the peripheral circulation (hemolytic jaundice) differs chemically from that due to biliary tract obstruction (obstructive jaundice).

Interpretation: The direct reaction may be immediate, delayed, or biphasic, as presumably seen in jaundice due to biliary obstruction. The indirect reaction is presumably seen in jaundice due to hemolysis, as hemolytic jaundice. The quantitative test may be done to determine the degree of hyperbilirubinemia. Normal range: 0.2-1 units.

3. *Urobilinogen.*—Principle: Bile pigment excreted into the intestinal tract is converted into urobilinogen, which is absorbed and reconverted by the liver into bilirubin. In complete biliary obstruction, in which no urobilinogen is formed, none is present in the urine.

Interpretation: Absence of urobilinogen from the urine of jaundiced subjects signifies complete biliary obstruction.

TESTS RELATIVE TO EXCRETION

Bromsulphalein, bilirubin and rose bengal red tests.—Principle: The ability of the liver to excrete injected substances.

Interpretation: Biliary obstruction, whether mechanical or due to parenchymal disease, results in retention of the injected substance in the circulation.

TESTS RELATIVE TO CARBOHYDRATE METABOLISM

Levulose and galactose tests.—Principle: These tests are dependent on the ability of the liver to metabolize carbohydrates.

Interpretation: (1) Levulose test: Following the oral administration of 40 gm. of levulose, the blood sugar curve should normally approach within 15 mg. of the fasting level at the end of two hours. (2) Galactose test: Following the oral administration of 40 gm. of galactose the output of urine during the next five hours should contain less than 3.0 gm. of sugar.

In obstructive jaundice the carbohydrate metabolism is supposedly not disturbed, as

it would be in jaundice caused by parenchymal liver damage.

TESTS RELATIVE TO DETOXICATION

Principle: Such tests are based on the ability of the liver to synthesize hippuric acid from orally administered sodium benzoate.

Interpretation: The oral administration of 5.9 gm. of sodium benzoate normally results in the excretion in the urine of a total of 3 gm. or more of hippuric acid over a four-hour period.

TESTS RELATIVE TO PROTEIN METABOLISM

Principle: Such tests are based on the role played by the liver in the maintenance of the albumin-globulin ratio in the blood plasma, deaminization of amino acids, urea and fibrinogen formation.

Interpretation: Inversion of the albumin-globulin ratio, due to an increase in the globulin fraction, is seen in advanced hepatic cirrhosis (Takata-Ara test).

TESTS RELATIVE TO THE STORAGE AND METABOLISM OF THE ERYTHROCYTE-MATURING FACTOR

Principle: Inability of the liver to metabolize the intrinsic factor secreted by the stomach results in the development of a macrocytic hyperchromic anemia.

Interpretation: Following the parenteral injection of liver extract, in the presence of a macrocytic hyperchromic anemia, there will be a reticulocyte response, despite the demonstration of the intrinsic factor in the gastric juice.

TESTS RELATIVE TO BLEEDING, CLOT FORMATION AND CONTRACTION

Principle: Such tests are designed to identify the bleeding tendency in clinically jaundiced patients. The bleeding tendency is probably due to deficiencies in the essential elements responsible for clot formation and clot contractility.

Interpretation: Prolongation of the normal bleeding time, coagulation time and prothrombin time, or decrease in the serum volume index, indicates a bleeding tendency during or following operative procedures. It should be observed:

1. That normal results from the above tests are no guarantee that excessive bleeding will not occur at operation.

2. That the intensity of the jaundice is no index of the bleeding tendency. The greater the hepatic insufficiency, however, the greater is the tendency to hemorrhage.

OTHER DIAGNOSTIC AIDS

In addition to the liver function tests listed, certain other diagnostic aids, although indirect, may be of considerable value in any disease process which involves the liver. These aids include:[2,3,6]

1. Duodenal intubation and drainage.
2. Roentgenologic visualization of the gallbladder.
3. Roentgenologic visualization of the stomach and duodenum.
4. Roentgenologic study of the diaphragmatic area.
5. Roentgenologic visualization of the liver by intravenous injections of radio-opaque substances.
6. Peritoneoscopy.
7. Pneumoperitoneum.
8. Needle punch biopsy of the liver.

INTERPRETATION OF INDIRECT DIAGNOSTIC AIDS IN THE DIFFERENTIATION OF LIVER DISEASE

1. The demonstration, by means of duodenal lavage, that bile is present in the duodenum is the most direct proof possible that a complete biliary obstruction does not exist. A negative result, however, may be due to improper technic and is therefore not reliable.

2. The demonstration by roentgenographic visualization that the gallbladder fills and empties normally is conclusive evidence that no complete biliary obstruction exists. A negative result, however, is completely unreliable in proving the existence of a complete obstruction.

3. Roentgenographic visualization of the stomach and duodenum may reveal pathologic lesions suggestive of the pathologic lesion in the liver. Neoplasms of the stomach, for example, might lead one to believe that a similar condition exists as the cause of the biliary obstruction. Changes in the contour of the duodenum, such as would be produced by neoplasm of the head of the pancreas, strongly suggest that the biliary obstruction is due to the pancreatic tumor.

4. Roentgenographic study of both diaphragmatic areas frequently presents evidence of hepatic displacement, tumors, cysts or abscesses. The interpretation of these findings in the presence or absence of jaundice is clear. The point should be made, however, that a solitary, intrahepatic neoplasm or abscess frequently exists without clinical jaundice.

5. Roentgenographic visualization of the liver by the intravenous injection of radiopaque substances (thorium dioxide) reveals the entire outline of the liver and may demonstrate hepatic enlargement, cirrhosis, abscess, or tumor formation. It is agreed, however, that the diagnostic information obtained by this method may well be obtained by simpler methods. In addition, the fact that the injected material remains more or less permanently in the reticuloendothelial cells renders this test undesirable as a diagnostic procedure.

6. Direct visualization of the lower edge of the liver is possible by peritoneoscopy. This method may be used to demonstrate pathologic lesions at or about the gallbladder and the liver edge, and biopsies may be taken while the instrument is in place. The limitations of the method are obvious, but the possibilities for future development are promising.

7. The simple injection of air into the peritoneal cavity (pneumoperitoneum) will aid in visualizing the size and shape of the liver. It is of especial value in cirrhosis of the liver.

8. Needle punch biopsy supplies information which is conclusive evidence of the pathologic lesions at the site from which the biopsy is taken, and the method is certainly a distinct addition to our diagnostic armamentarium. It has been made more practical by the development of a special needle whose use is not attended with the same degree of trauma, or maceration of tissue, incident to the use of needles which require a suction syringe to obtain the specimen.

For the last year we have employed punch biopsy of superficially located tumors as a diagnostic method, and have repeatedly demonstrated the accuracy by which biopsy material can be obtained. We use a needle manufactured by the McGregor Instrument Company (Vim-Silverman biopsy needle). The instrument, which operates on the principle of a trocar, consists of a short, hollow outer needle, with a beveled edge, containing a smaller-bore hollow needle. The inner needle is longer than the outer needle and is divided in the center. The cutting edge of the inner needle is beveled in the shape of a V. The technic consists of little more than the simple insertion of the two needles, one within the other, in the same manner as an aspirating needle would be inserted. Local anesthesia is used, and a small incision is made in the skin before the needle is inserted, both to facilitate its entrance through the abdominal wall and to eliminate the possibility of including skin in the biopsy specimen, which might lead to an incorrect diagnosis of squamous cell carcinoma.

The operator should practice punch biopsy on the liver of the cadaver before attempting to employ it in living subjects, to learn to appreciate the "feel" of tumor tissue. Certain precautions are obviously necessary when this method is employed, and it is not entirely free from risk, though the proper selection of cases is the first principle of both safety and success.

The method is particularly well adapted to cases of liver disease, regardless of whether or not jaundice is present, in which the liver is large, and there are no other definite findings either by physical examination or laboratory tests. The site of the puncture should be the area most superficially located. If a nodule or nodules can be palpated, specimens should be obtained from those areas. The dangers of hemorrhage following the puncture may be minimized by appropriate examinations for a possible bleeding tendency before biopsy is attempted. These precautions minimize the dangers of the method. Multiple punctures may be done on the same patient at different sites.

SUMMARY AND CONCLUSIONS

1. The pathologic physiology of jaundice and its classification are reviewed.

2. The functions of the liver are outlined.

3. The principles and interpretations of the more commonly employed liver function tests are presented.

4. The inefficiency of the tests for liver function to diagnose or prognosticate liver disease is pointed out.

5. The indirect aids in the differential diagnosis of liver disease are reviewed.

6. The value of needle punch biopsy as a diagnostic aid in selected cases of liver disease is presented.

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BASIC THERAPEUTIC CONSIDERATIONS IN DISEASES OF THE LIVER

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Because the therapy of diseases of the liver obviously covers too vast a field to be handled in any single discussion, I propose to dismiss very briefly the treatment of certain special diseases and conditions. It will then be possible to devote the greater portion of this paper to what might be termed the basic therapy of hepatic disease, that is, the corrective therapy of liver damage, regardless of its origin, and, in particular, the basic therapy of the hemorrhagic diathesis in jaundice.

THE THERAPY OF SPECIAL DISEASES OF THE LIVER

Toxic, infectious and hemolytic jaundice, to employ the generally accepted classification of McNee,[1] are medical states which do not concern the surgeon after he has once eliminated them as diagnostic possibilities. Obstructive jaundice is a condition of mechanical origin which must be corrected by mechanical, that is, by surgical measures. Depending upon whether the fundamental pathologic cause is stones, strictures, tumors, or similar causes, the appropriate operation may be cholecystectomy, cholecystostomy, choledochostomy, resection of the common duct or of the ampulla of Vater, partial pancreatectomy, some short circuiting operation, or some combination of two or more of these measures. Intrahepatic obstructive jaundice is not amenable to surgical correction.

Solitary amebic abscess of the liver, as Ochsner and DeBakey[2] have clearly shown, is attended with a much lower mortality when it is treated by aspiration and emetine therapy than when open drainage is employed. Pyogenic abscesses of the liver, which are multiple, are not relieved by surgical measures unless they become confluent, which does not usually happen.

Splenectomy has been advocated for primary biliary cirrhosis and has been successful in a very limited number of cases.

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The secondary or obstructive type of biliary cirrhosis is treated by the release of the causative obstruction. The various operations which have been recommended for the relief of portal cirrhosis all have the same object, the decrease of the associated portal pressure, but the results have been disappointing. Possible procedures include the formation of an Eck fistula, the intraperitoneal attachment of the omentum to the anterior peritoneum, its extraperitoneal attachment to the recti muscles, and resection of the small intestine.

Solitary tumors of the liver can be excised by the electro-surgical method of Tinker[3] if other circumstances are favorable. For injuries of the liver, particularly crushing injuries which involve extensive destruction of tissue, we have recommended resection of the traumatized area, on the basis of our experimental work, which has shown that, aside from hemorrhage and shock, tissue autolysis is the chief cause of death.[4] The introduction of thrombin for local application by Seegers and his associates[5] would seem to have solved the problem of hemorrhage, which formerly kept suggestions for resection of the liver largely in the realm of theory.

GLUCOSE THERAPY

Experimental and clinical observations have repeatedly made it clear that glucose is the therapeutic sheet anchor in subjects with hepatic and biliary tract disease, and that any other agent, however necessary it may be, is additive and never a substitute for it. Whatever the cause of the liver disease or damage, the affected subject is like an experimental animal whose liver function has been partially destroyed by hepatotoxic drugs or completely destroyed by hepatectomy but from which death can be permanently or temporarily averted by glucose therapy. To observe its effects in hepatectomized animals, which otherwise would die within a few hours, at most, is to witness one of the most dramatic sights of experimental surgery, as has been repeatedly shown.

In normal animals, according to Ravdin,[6] the liver contains 5.5 per cent of glycogen for every 100 gm. of weight, a proportion which in jaundiced dogs is reduced to 1.4 per cent. The higher the percentage of fat in the liver, regardless of the glycogen storage level, the more susceptible it is to injury, whether by disease, toxic drugs or anesthesia. In fact, studies from Ravdin's[7] clinic have shown that the protective action of large stores of hepatic glycogen depends in great part upon the displacement of the fat content by the deposition of glycogen in the liver.

The brilliant results obtained by surgeons who have used glucose therapy intelligently, particularly in biliary tract and thyroid surgery, need no repetition. Equally impressive results are frequently obtained by other surgeons who use the method empirically, according to the example of others, without any comprehension of its rationale. The value of the method has also been proved by the postoperative morbidity and mortality of surgeons who have failed to use it at all. My studies by the Quick test in various diseases have clearly shown that by the use of glucose therapy failing liver function can be restored to a relatively or absolutely safe level before operation and maintained at safe rates after operation.[8-10] In fact, I have observed very few cases in which adequate preoperative glucose therapy has not resulted in a smaller than usual drop in liver function after operation, and have on record a number of cases in which the postoperative values, as the result of such therapy, have actually been higher than the preoperative (figs. 1 and 2). The delayed fall of function which occurs in many cases when glucose therapy is withdrawn permits interesting speculations as to what might have occurred without it in the immediate critical postoperative period, when a sharp depression of function might have been fatal.

To be fully effective, glucose therapy must be administered:

1. For a reasonably long period of time before operation, on the basis of the patient's needs, as determined by initial and serial liver function tests.

FIG. 1
GROUP STUDIES IN APPENDECTOMIZED PATIENTS
(QUICK LIVER FUNCTION TEST.)

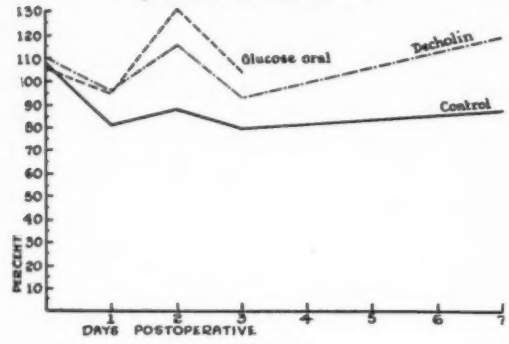
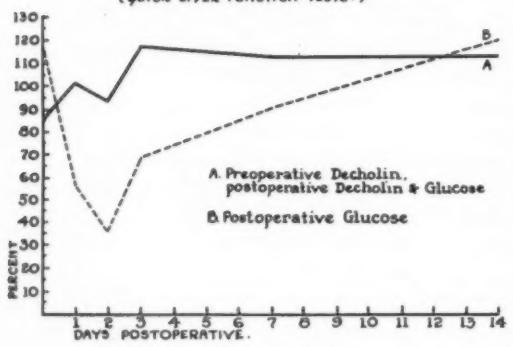


FIG. 2.
GROUP STUDIES IN CHOLECYSTOMIZED PATIENTS
(QUICK LIVER FUNCTION TESTS.)



2. By month, in preference to vein, whenever this is practical, intravenous therapy being reserved for patients who cannot take glucose by mouth and for immediate preoperative and postoperative needs.

3. At a continuous, steady rate rather than intermittently, no matter what mode of administration is employed. When glucose is used at irregular intervals, periods intervene in which the hepatic glycogen becomes decreased, sometimes to perilously low levels or to levels at which increased quantities of glucose must be administered before restoration to normal levels is possible. My own experience has shown that postoperative glucose therapy is far more effective if preoperative glucose therapy has been employed.

4. Up to the very time of operation, since it has been shown that the hepatic glycogen decreases rapidly during anesthesia.[11]

5. In larger amounts in jaundiced and other individuals whose disease is such that their liver glycogen is particularly low.

6. Without insulin, unless diabetes is present and requires, itself, the use of this agent.[11]

Winslow's[12] recent studies on the utilization of glucose in surgical patients supply an accurate guide to dosage, solution and rate of administration. They supply further proof, as he points out, of Allen's dextrose paradox, a term used to designate "that remarkable power of every non-diabetic organism to utilize dextrose in absolutely unlimited quantities . . . the amount of sugar utilized is governed not by any restriction of power on the part of the organism; it is governed only by the dose."

That the oral administration of glucose is actually more effective than the intravenous administration is a fact which is either not generally known or is generally overlooked. Althausen's[11] comparative studies, however, have made it quite clear, and therapy is greatly simplified if the oral route is used whenever circumstances permit. The simple addition of sweetened fruit juices and hard candy to the diet produces astonishingly good results, with no inconveniences to physician or patient (fig. 1).

Evidence has accumulated to show that dehydration seriously impairs the ability of the liver to utilize glucose, and the importance of the maintenance of the proper fluid balance has been repeatedly stressed by Coller[13] and others. On the other hand, it should be remembered that the too rapid or too profuse administration of fluids results in the loss of a considerable quantity of sugar through the kidney glomeruli before it has had any chance of being utilized by the liver.

Ravdin and his associates[7] have pointed out that a high glycogen and a low lipid level in the liver do not necessarily go hand in hand, and have stressed the importance of including protein (at least 14 per cent) in the diet. The possibilities of intravenous protein therapy have recently been demonstrated by Elman and Weiner,[14] and Quick[15] some years ago pointed

out that this necessary element of the diet could be safely and rapidly supplied by the use of gelatin. The present advertising of the manufacturers of gelatin suggests that they have learned of this or some similar recommendation.

THE THERAPY OF THE HEMORRHAGIC DIATHESIS IN JAUNDICE

The therapy of the hemorrhagic diathesis in jaundice depends upon the etiologic factors which produce it. These factors, to express it as simply as possible, are now known to be a deficiency in the plasma prothrombin of the blood,[16] which in turn is due to a deficiency of the fat-soluble vitamin K,[17] which in turn is due to the absence of bile salts in the intestinal tract,[18] or to the destruction of intestinal surface which prevents their absorption.[19] The background of the whole picture is liver damage, which apparently may be actually causative or merely concomitant.[20] The final convergence of these numerous lines of experimental inquiry has for the first time permitted a rational concept of the hemorrhagic diathesis and at the same time has made clear the appropriate therapy for its control. The bleeding tendency is now recognized as a "conditioned deficiency" and its correction is effected by rectification of the various deficiencies which make up the picture and which are expressed, so to speak, as hemorrhage.

I share Quick's[21] opinion as to the relative infrequency of the hemorrhagic diathesis. It is certainly not common in this community. One hesitates to postulate a geographic distribution, but it may possibly be, in the light of present knowledge, that it is unusual here because of the large quantities of vitamin K which are included in the usual diet. Green vegetables are in market at reasonable rates at all seasons of the year. Intelligent persons use them in their diets to balance them. The poorer classes eat them because they are cheap. The negro, as we all know, likes cabbage and turnip greens above all things, and that he eats them cooked with salt meat, ham bone or bacon is highly significant, for vitamin K is a fat-soluble vitamin.

Whether or not this explanation covers the infrequency of hemorrhage in jaundice in this community I do not undertake to say. It is pure speculation, but it does not seem unreasonable in the light of recent discoveries. A still more speculative possibility is that different individuals may exhibit a bleeding tendency under different climatic conditions, and that in this temperate and semi-tropical climate the critical level is somewhat lower than it is in colder climates. The low values which we have found for the serum volume index in newborn children who have had no hemorrhagic tendency seem additional corroboration of this theory.[22]

Be this as it may, the only proper attitude is to suspect that every jaundiced subject may have a bleeding tendency and to make the necessary tests to demonstrate it. Such studies provide information as to the patient's preoperative status, determine the preoperative therapy to be employed, and furnish a basis of comparison for postoperative studies as well as a guide to postoperative therapy. The bedside test of Ziffren and his associates[23] has not proved entirely accurate in my experience, and I prefer the more complicated test for prothrombin time devised by Quick and his associates[16] or the very simple but apparently entirely accurate serum volume index of our own devising.[24] Some test for liver function should also be employed, preferably the Quick hippuric acid test[21] or the serum bilirubin test,[25] or both.

Single tests for either the hemorrhagic diathesis or for liver function are not reliable, especially if they are performed considerably in advance of the operation. The only two instances in which I have observed the serum volume index to be inaccurate were cases in which single determinations were made three and four weeks, respectively, before operation. Conditions may alter within a few hours, let alone within days and weeks.

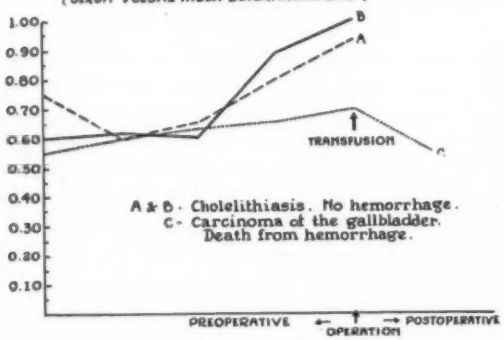
Serial tests are also important after operation when, in addition to operative trauma, a prothrombin deficiency exists, perhaps due to the presumable consumption of large amounts in the production of

the fibrinous exudate in the margin of the wound as a part of the healing process.

The correction of a demonstrated tendency to hemorrhage, in view of what has just been said, is a fairly simple matter. It involves: (1) The supply of vitamin K in some concentrated and readily assimilable form; (2) the supply of bile salts; (3) the supply of a minimum amount of fat in the diet; (4) the use of glucose therapy for the improvement of liver function, as has already been described; (5) the use of such other general measures as would be employed in the preparation of any patient for serious surgery.

FIG. 3.

VITAMIN K THERAPY IN THE HEMORRHAGIC DIATHESIS
(SERUM VOLUME INDEX DETERMINATIONS.)



I have used vitamin K in its natural form, that is, in tomatoes, lettuce, cabbage and other vegetables, and have had remarkably good results with this crude method (fig. 3A). I have used it in the form of cerophyll, a preparation of dried young cereal plants, oats and wheat, and in the form of klotogen Abbott, a vitamin K concentrate. Recently I have used it in the form of thyloquinone Squibb, a synthetic form (2 methyl 1, 4 naphthoquinone). The synthetic substance is new, but has already given excellent results and will probably, as a matter of convenience, eventually replace most of the other preparations. The only patient I have ever seen who failed to respond to adequate vitamin K-bile salt therapy was treated with cerophyll (fig. 3C), but her lack of response was undoubtedly due to her depressed liver function rather than to the form in which the vitamin was administered. Exactly what the connection is between liver damage and the hemorrhagic diathesis is not yet clear, but there seems no doubt that vitamin K therapy is not effective unless liver function can be improved.

Various preparations of bile salts are reported as giving satisfactory results. I use bilein Abbott, but I do not believe that general rules can or should be laid down as to such details. Provided that vitamin K and bile salts are administered in adequate amounts, each surgeon will eventually determine his own mode of therapy on the basis of his own experience and observations. The reports in the literature seem to make that point clear.

Administration can be made by mouth or duodenal tube, intramuscularly or intravenously, depending upon the urgency of the circumstances, the state of the patient, and the type of preparation used. Generally speaking, the oral route should be used whenever time permits, the intravenous route being reserved for cases in which bleeding has already occurred or rapid preoperative preparation is essential. Again these are matters which the individual surgeon will work out for himself. The simpler measures, however, seem surprisingly effective. I had excellent results in a recent case of postoperative hemorrhage which I saw in consultation by putting klotogen and bilein into the stomach by tube.

Jaundiced subjects should be classified into three groups, on the basis of whatever test for the hemorrhagic diathesis the surgeon may be using. Patients with a serum volume index above 0.85 (1.0 being the standard of normal) are considered as unlikely to bleed, patients with indices between 0.85 and 0.75 as within the danger zone, and patients with indices below 0.75 as in frank risk of hemorrhage. An ample margin of safety should always be allowed, for both liver function and plasma prothrombin are decreased after operation in every case. For that reason, I agree entirely with Butt and his associates[19] that the time to treat deficiency states is when they are apparent only in the laboratory.

Furthermore, when liver function tests are low or when gross hepatic damage is observed at operation, precautions should be redoubled. It is possible to control bleeding after operation in many unprepared or badly prepared cases, but certainly today the surgeon has no right to submit the patient to such a risk. Finally, therapeutic results are apparently short-lived as long as the basic pathologic state remains uncorrected, and vitamin K-bile salt therapy should never be discontinued merely because one or two tests indicate that the bleeding tendency has been controlled.

Although transfusion is no longer as important as it once was, it is still the quickest possible method of replacing lost blood and also of increasing the prothrombin in the blood stream. The replacement of prothrombin explains why in the pre-vitamin K era transfusion done immediately before operation was frequently effective, even though it was used empirically. It also explains Walters'[26] observations that there is a period of eight to ten hours after transfusion which is the optimum period for operation and in which the coagulation time is visibly improved. Unawares, he was advising operation at the time a temporary increase in prothrombin has been effected.

Transfusion also improves the oxygen saturation of the blood, which in turn improves the state of the liver, and thus improves the effectiveness of vitamin K therapy. Ravdin and his associates have shown that the use of oxygen effects remarkable improvement in livers in which fatty changes are apparent.

DECHOLIN THERAPY

Remarkable improvement of liver function has been obtained in non-jaundiced patients with latent or evident liver damage by the use of various bile salts. My own preference is for decholin (dehydrocholic acid), which is not toxic and which has so marked a cholagogic action that it produces all the effects of a physiologic lavage. It is contraindicated in obstructive jaundice, in which an increased bile secretion could serve no useful purpose and might do harm.

I have used decholin in biliary tract and thyroid surgery, in various forms of liver disease, and in appendectomies, herniorrhaphies, and similar elective procedures. As a general rule, when it was taken by mouth for 48 or even for 24 hours before operation, the fall in liver function after operation was considerably less than usual and the values were sometimes higher than the preoperative values (figs. 1 and 2). The use of glucose, by mouth or vein, and decholin therapy in combination produced still better results (fig. 2).

This is such a simple method of improving liver function, and the good results are so out of proportion to the slight trouble and expense involved, that it seems well to employ it in even normal subjects, in whom ordinarily no special preoperative or postoperative therapy is employed, to provide against the fall in liver function which occurs after all surgery.

Decholin is also useful in biliary tract disease in which operation is refused or contraindicated for some reason. I have under such treatment at this time a woman 80 years of age who has been treated for gallbladder disease by various medical methods for the past 12 years. She is now enjoying, she tells me, the greatest comfort she has had during that period.

The most striking results with decholin therapy have occurred in a small group of patients who were apparently on the verge of developing the type of postoperative liver failure in which the renal factor is dominant. It is not too much to say that in three or four such cases the patients seem literally to have been dragged back from the gates of death. On the other hand, decholin therapy has not been effective in averting the fatal outcome in the hyperpyrexic type of liver failure, at least when the syndrome is definitely established.

THE CONCEPT OF LATENT HEPATIC DYSFUNCTION

It will be observed that this communication has dealt not only with frank disease of the liver but with diseases in which he-

patic deficiency is not ordinarily recognized to play any part. Our own studies with the Quick hippuric acid[9, 10] and serum bilirubin tests[27] have shown, however, that liver deficiency is a rather frequent finding in disease which does not primarily involve the liver or the biliary apparatus.

We are not alone in this opinion. This is the concept of the liver weakling, as advanced by Henschen.[28] This is the concept of unsuspected hepatic deficiency, as advanced by McNee,[29] Judd,[30] Weir,[31] Rozendaal and Comfort,[32] Hurst[33] and others. Time does not permit a discussion of it, but it should be said that its acceptance carries two implications:

1. The investigation of every surgical patient from the standpoint of the state of his liver, as well as from the standpoint of the state of his heart, lungs and kidneys.

2. The routine use of such simple measures as oral glucose or decholin therapy, or both, as prophylactic measures in patients in whom any degree of hepatic dysfunction is demonstrated, and preferably also in patients whose liver function is normal, to guard against the postoperative decrease which has been shown to occur after even the simplest surgery.

SUMMARY AND CONCLUSIONS

1. The therapy of various surgical diseases of the liver has been briefly outlined.

2. Glucose is the sheet anchor of therapy in hepatic disease, and any other treatment, however essential it may be, is additive and never a substitute for it. Oral administration is surprisingly effective.

3. The identification of the jaundiced patients who are likely to bleed is the first consideration in the prevention of the catastrophe. Corrective therapy includes the supply of vitamin K in combination with bile salts and a minimum proportion of fat in the diet, in addition to glucose therapy. Transfusion is of temporary benefit in the occasional case.

4. Decholin (dehydrocholic acid) improves liver function, particularly when combined with glucose therapy. It also can be given by mouth.

5. The concept of the liver weakling or of unsuspected hepatic dysfunction suggests the investigation of all surgical patients from the standpoint of the state of their livers and the use of such simple measures as oral glucose and decholin to guard against the fall in liver function which usually accompanies all operative procedures.

6. It should, of course, be understood that nothing which has been suggested in regard to studies of liver function should in any way be construed as a suggestion that laboratory tests should be substituted for clinical observation.

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INFLUENZAL MENINGITIS*

A REVIEW OF RECENT LITERATURE WITH CASE REPORTS

RUTH ALEMAN, M. D.†

NEW ORLEANS

Seven cases of influenzal meningitis treated with sulfapyridine have been fatal in the last few months in New Orleans in children under two years of age. They are being reported in the belief that if we are eventually to arrive at a fair conclusion as to the efficacy of chemotherapy in the treatment of this disease, failures as well as successes should be uniformly reported, so that the percentage of cures may be honestly computed. If all fatalities are reported, some day it may be determined whether or not the cures attributed to chemotherapy exceed the small percentage of spontaneous cures.

Although the differential diagnosis of meningitis belongs essentially to the present century, Joseph Jones,[1] writing in 1873, tells that meningitis was reported to have existed in the southern United States as early as 1776, and that it invaded New Orleans in 1826, again in 1850, and again in 1872-73. It was first called "head pleurisy" and later cerebrospinal meningitis.

New Orleans physicians were not slow in becoming familiar with European discoveries. Discussing Bloom's[2] survey of influenzal meningitis in 1930, J. B. Guthrie stated that cases were being so diagnosed in the New Orleans Charity Hospital during his internship in 1898-99, and that a three months' old baby under his care recovered with no treatment other than hot baths. It is assumed the diagnosis of influenzal meningitis was made without laboratory confirmation, since Slawyk's first laboratory diagnosis was made in 1899.

Since 1899, medical science has accomplished many advances in chemotherapy, immunology, vaccine preparation, and supportive treatment, and has developed a technic for the treatment of influenzal meningitis in which so many factors participate that when a recovery is effected it is difficult or impossible to know what cured the patient. It is interesting to note in this connection that, although the failure to cure influenzal meningitis is always excused on the basis of virulence of the disease, success of a remedy is not generally attributed to a less virulent strain, nor relegated to the class of spontaneous cures.

SURVEY OF LITERATURE

In 1936, Wilkes-Weiss[3] made a critical survey of 500 cases of influenzal meningitis from the literature. "There were 373 infants under two years of age with nine recoveries, giving a mortality of 97.6 per cent, while 26 of the 127 patients over two recovered, or a mortality of 79.5 per cent."

*Delivered at the regional meeting of the American Academy of Pediatrics (Region II) at the Edgewater Gulf Hotel, March 15, 1940.

†From the Department of Pediatrics, Louisiana State University Medical Center.

The preponderating incidence of the disease in infants has been brought out many times, but nowhere else have I found the difference in mortality so graphically stated.

This survey was made in 1936, before treatment with drugs of the sulfonamide group had been instituted, and it is well to bear this in mind, for, unless chemotherapy betters the pre-established mortality rate of 79.5 per cent in patients over two years of age, it has accomplished nothing. On the other hand, even a small percentage of recoveries in infants is significant.

In 1930, Bloom[2] assembled Rivers' 220 cases which had been published in 1922,[4] his own and others from the literature, totaling 302 cases. One hundred and eighty-seven were under two years of age, of whom only six recovered, or a mortality for this age group of 96.7 per cent.

In 1934, Neal et al.[5] reported 111 cases of their own with 62 under two years, all 62 fatal. Similar series of patients under two with 100 per cent mortality are reported by Jenks and Radbill,[6] 26, (1931); Hart,[7] 16, (1932); Ward and Fothergill,[8] 25, (1932); Tokunaga,[9] 23, (1936); Bridgeman and Bissett,[10] 5, (1938); New Orleans Charity Hospital records, 17, (unreported); Silverthorne et al.,[11] approximately 50 (1937). (They state that 78 per cent of 70 children were between two months and three years, and the only patient who recovered was more than two years old. In their serum treated group of 36 cases with 11 cures, 78 per cent under three years, only two under two years recovered.) Huntington, Wilkes-Weiss (1936)[12] report 42 cases under two years with one cure.

From these and other recent reports, I have assembled 478 cases of influenzal meningitis in children under two years, including 17 at the New Orleans Charity Hospital during the last five years, and two in my private practice,—in all 15 recoveries, or a mortality of 96.8 per cent (table 1).

TABLE I

CASES OF INFLUENZAL MENINGITIS UNDER TWO YEARS

	Cases Reported	Died	Recovered
Rivers (1922)2	152	147	5
Marie & Pretet (1927)14	1	0	1
Bloom (1930)2	35	34	1
Jenks & Radbill (1931)6	26	26	0
Martmer & Davidson (1931)42	1	0	1
Gibbens (1931)47	1	1	0
Johnson (1932)48	1	1	0
Hart (1932)7	16	16	0
Ward & Fothergill (1932)8	25	25	0
Pittman (1933)13 About	5	5	0
Paisseau (1933) (See Spekter)18	1	0	1
Neal et al. (1934)5	62	62	0
Faust & Stein (1935)41	1	0	1
Huntington & Wilkes-Weiss (1936)12	42	41	1
Tokunaga (1936)9	23	23	0
Silverthorne et al. (1937)11 About	50	48	2
Basman & Perley (1937)29	1	1	0
McQuarrie (1937)30	1	1	0
Jones (1937)24	5	5	0
Massachusetts General Hospital (1938)33	1	1	0
Bridgeman & Bissett (1938)10	5	5	0
Waring (1939)23	1	0	1
Roche & Caughey (1939)36	1	0	1
Sappington & Favorite (1939)21	2	2	0
New Orleans Charity Hospital (1935-1940)	17	17	0
Aléman (1939-1940)	2	2	0
Totals	478	463	15

This slight reduction in mortality since Wilkes-Weiss' 97.6 per cent in 1936 is perhaps due to reported isolated cures, without reports of as many isolated fatalities, and inability to determine ages in many reports. Unfortunately, the percentage of cures in unselected series does not support optimism in regard to any special form of treatment.

ANTI-INFLUENZAL SERUM

Wollstein[5] prepared an anti-influenzal serum by immunizing goats in 1911. Torrey and Packard[13] each reported cure of an eleven year-old patient with it, in 1915 and 1916 respectively. Dunn used it in 11 and Neal in five fatal cases. Anti-influenzal horse serum has been developed since 1920 by the Research Laboratory of New York City; by Wilkes-Weiss, of Washington University, St. Louis; by Hugh K. Ward and Joyce Wright, of Harvard; by Margaret Pittmann, of the Rockefeller Insti-

tute; and by the Massachusetts Board of Health (Fothergill's serum), which last is the serum with which Silverthorne et al., Schwentker and others have obtained such promising results.

Autogenous vaccines are being used, and cure of a child under two years was reported in France in 1927 (Marie and Pretet[14]) by intrathecal injection of vaccine prepared from a fatal case of influenzal meningitis.

Hattie Alexander,[15] of the Department of Diseases of Children, College of Physicians and Surgeons, Columbia University, writes: "The treatment of influenzal meningitis in children with sera from horses immunized with *H. influenzae* has in general been unsuccessful." With this in mind she has developed a rabbit serum which, after experiments with animals, was tried in humans. She says: "The antiserum produced by this method has yielded encouraging results in the treatment of *H. influenzae* meningitis. Untreated serum was used intrathecally, a globulin fraction intravenously."

So far as can be determined from the literature, patients treated with serum from the Massachusetts Board of Health, by Fothergill's method, stand alone in point of view of mortality. In his last published report (1937), Fothergill[16] reported 201 serum-treated cases with 41 recoveries, or a mortality of 84.6 per cent. He included in this report two striking series, Schwentker's 17 cases with five recoveries, and that of Silverthorne and Snelling, 35 cases with 10 recoveries, later reported by Silverthorne et al. with an additional case,* making 36 cases with 11 recoveries.[11]

However, these reports are counterbalanced by apparently overlapping cases from the Infants and Children's Hospital, Boston, as reported by Ely R. Cannon. In a discussion of Dr. Neal's[17] paper in 1938, Cannon said: "Ninety-six patients with influenzal meningitis have been treated with specific serum and of this group there were six recoveries; six additional patients have received combined serum and sulfanilamide treatment with no recoveries."

Spekter (1936),[18] Bridgeman and Bissett (1938)[10] on the West coast, and Young et al. in Omaha (1938),[19] each report cures with serum shipped by Fothergill, the ages being six, eight and five years respectively. Rittenberg's cure was in an eight year old child who also received serum.

Neal,[20] speaking of Fothergill's method of serum and complement says: "We have tried the combination of serum and complement in a fair number of cases without success up to the present time."

In 1933, Pittman[13] reported the results of 18 patients treated with serum from her laboratory. Only one recovered: a child two years old.

In 1936, Huntington and Wilkes-Weiss[3] reported use of serum in 15 patients in the St. Louis Children's Hospital and four elsewhere, with only one recovery, a child seven years old. Summarizing their experience and several other cures, they say: "One would have been more inclined to attach significance to these recoveries if the individuals had been infants. If these patients had been the only ones in the older age group who had received serum, a stubborn optimist, while conceding that the serum was perhaps useless in infants, might have continued to hope that it would be useful in older patients . . . Evidently the ultimate results are discouraging in both groups." And further: "Anti-influenzal serum is not a success despite the brilliant and arduous work which lies back of some of the clinical experiments . . . Clearly there is some unknown factor which makes the dislodgment of the meningococcus relatively easy, while meningeal *H. influenzae* is not readily evicted."

Neal et al.[5] reported use of anti-influenzal serum in four cases in 1934, but say: "In none of them could the use of the specific serum be regarded as a determining factor in the recovery."

*Since presentation of the present paper (March 15, 1940) an article has appeared by Silverthorne et al. (April, 1940), reporting a total of 65 patients who received specific sera with a mortality of 76 per cent. Sixty-nine per cent were under three years of age; recoveries are not classified as to age. Twenty-nine of the total also received either sulfanilamide or sulfapyridine, of which 22 died.[49]

TABLE 2

PATIENTS WITH INFLUENZAL MENINGITIS TREATED WITH SULFANILAMIDE

	Cases Reported	Ages	Died	Recovered
Basman & Perley (1937)[29]	1	1 year	1	0
Jones (1937)[24]	1	2 yr., 10 mo.	0	1
McIntosh et al. (1937)[22]	2	6 yr. each	2	0
McQuarrie (1937)[30]	1	20 mo.	1	0
Taylor (1938)[32]	1	4 yr.	1	0
Folsom & Gerchow (1938)[26]	1	10 yr.	0	1
Bachhuber (1938)[31]	1	3 yr.	1	0
Massachusetts General Hospital (1938)[33]	1	8 mo.	1	0
Teggart (1938)[25]	1	Adult	0	1
Cannon (1938)[17]	7	Not stated	6	1
Gordon (1938)[27]	1	7 yr.	0	1
Young & Moore (1938)[19]	1	5 yr.	0	1
Sappington & Favorite (1939)[21]				
(Reporting Appelbaum's,	18	Not stated	17	1
Hageman's,	1	Not stated	1	0
their own)	2	11 mo., 3 mo.	2	0
Waring (1939)[23]	6	Not stated	6	0
Brown et al. (1939)[28]	1	6 yr.	0	1
Neal (1939)[20]	20	Not stated	18	2
New Orleans Charity Hospital	15	9 mo. 7 mo., 2 yr., 3 mo., 4 yr., 6 mo., 2½ yr., 3 mo., 3 yr., 20 mo., 5 yr., 9 mo., 1 yr., 7 mo., 11 yr.	15	0
Total	82		72	10

In 1938, Neal[17] writes: "During the past five or six years there has been a decided increase in meningitis due to *B. influenzae.* Povitzky found experimentally that mice were effectively protected against lethal doses of the strain *B. influenzae* commonly associated with meningitis by the use of prontosil and a specific serum. With this form of meningitis the clinical results have not corresponded with the experimental results."

In 1939, she[30] repeats: "In treating this form we have used the specific serum intraspinally and also, as bacteriemia is often present, intravenously. Recently we have been combining the serum with prontosil for intraspinal use. Sulfanilamide is given also by other routes. The results, however, have been disappointing. Of 20 cases only two have recovered."

SULFANILAMIDE

The recent report of S. W. Sappington and Grant O. Favorite[21] on the use of sulfanilamide in all types of meningitis includes 25 cases of influenzal meningitis: Appelbaum's 18 cases, five other cases from the literature,* and two of their own. Appelbaum's one recovery "received both antiinfluenzal serum and sulfanilamide"; however, "three other cases received both serum and sulfanilamide but ended fatally." They conclude: "The results with sulfanilamide therapy in influenzal meningitis with or without serum so far are not encouraging, there being 24 deaths in 25 cases, a mortality of 96 per cent."

In addition to this series, Neal[20] reported 20 cases with only two recoveries, (1939); Cannon,[17] six, (1938), all fatal; McIntosh et al.,[22] two, both fatal, (1937); Waring,[23] six, all fatal, (1939); Jones[24] (1937), Teggart[25] (1938), Cannon[17] (1938), Folsom and Gerchow[26] (1938), Gordon[27] (1938), Young and Moore[19] (1938), Brown et al.[28] (1939), one cure each; Basman and Perley[29] (1937), McQuarrie[30] (1937), Bachhuber[31] (1938), Taylor[32] (1938), Massachusetts General

*Hageman's case[46] is the only one of these five not listed below.

Hospital cases[33] (1938) one death each (table 2).

Adding to these reported cases 15 unreported deaths in the New Orleans Charity Hospital during 1937-1939, we have a total of 82 cases treated with sulfanilamide or closely associated drugs of the same group with ten recoveries, a mortality of 87.8 per cent. In at least 30 cases, anti-influenzal serum was also given, only four of whom recovered. No recovery is reported in a child under two years; however, the ages are not given in four of the ten recoveries.

Long and Bliss[34] in their recent book say: "Neal was not impressed by the effect of sulfanilamide (in influenzal meningitis) in her series of cases, and our experience has been similar to hers."

SULFAPYRIDINE

Five recoveries from influenzal meningitis treated with sulfapyridine have been reported in the recent literature. Tom R. Hamilton and Frank C. Neff,[35] report recovery of a girl two years old treated in the University of Kansas Hospital. The writers knew of no published report "of this type of meningitis in which treatment with sulfapyridine had been successful, but it seemed advisable to try it, especially since serum therapy offered little benefit." No specific serum was used.

J. I. Waring[23] reported two recoveries with sulfapyridine, a negro girl six years old, and a negro boy 22 months, the girl with remaining slight deafness, and the boy with a slight ataxia. Both were treated at Roper Hospital, Charleston, S. C. "Eighteen other patients with the same disease in the hospital over a period of ten years all died. Specific serum was not used in any case, but sulfapyridine was used in three and sulfanilamide in six of the fatal cases."

E. H. Roche and J. E. Caughey[36] report two cures with M. & B. 693 which they report because then can trace no record of influenzal meningitis treated with this drug, a boy aged 17 months and a girl 12 years of age. They conclude: "In view of the almost uniformly fatal course of influenzal meningitis in children, the recovery of two consecutive patients, one of whom was only 17 months old, cannot reasonably be ascribed to coincidence. Apart from lumbar puncture and blood transfusions, whose inadequacy has been so conclusively proved in the past, the only treatment common to both cases was the administration of M. & B. 693. These considerations, together with the impressions gained from observation of the cases" compel the writers to believe that the good results obtained were pre-eminently due to this drug.

The death of two consecutive patients with influenzal meningitis in my private practice prevents me from sharing the enthusiasm of Roche and Caughey for sulfapyridine. However, its efficacy in the treatment of certain other diseases is not questioned, as we are dealing only with influenzal meningitis.

My discouraging results led me to a study of the cases of influenzal meningitis treated at the Charity Hospital in New Orleans during recent years. In 1936, Tripoli[37] stated that during the ten years 1925-1934 inclusive, there had been 20 cases of influenzal meningitis in the hospital. All were fatal.

The hospital records show that from 1935-1939 inclusive, 27 cases of influenzal meningitis were treated: none in 1935; in 1936, one; 1937, seven; 1938, 11; 1939, eight, making a total of 47 for the fifteen years 1925-1939, with no recoveries. During the last five years, the oldest patient treated for influenzal meningitis was 11 years, and there were 17 patients under two years of age.*

During 1937 and 1938, sulfanilamide was used in most instances. In 1939, eight patients were treated, all with sulfanilamide. In one case, sulfanilamide had been administered for three weeks before admission and meningococcic antitoxin was also given. In one case, sulfanilamide was temporarily substituted for sulfapyridine. In all cases the spinal fluid was frequently

*I am very grateful to Dr. Wright, Director of the New Orleans Charity Hospital, for permission to examine the records, and to the clerks of the record library for their courteous assistance.

drained, the customary supportive regimen of transfusions and infusions was given, but, regardless of the route of entrance, intraspinally, intramuscularly, or intravenously, sulfapyridine failed to save a single patient (table 3).

TABLE 3

INFLUENZAL MENINGITIS IN NEW ORLEANS CHARITY HOSPITAL

Year	1925-1939 Total cases treated	Deaths	Prontosil or sulfanilamide administered	Sulfapyridine administered
1925-1934 (Tripoli)	20	20		
1935	37			
1936	0			
1937	1	1		
1938	7	7	4	
1939	11	11	10	
	8	8	1	8
	47*	47	15	8

*It should be remembered that this 100 per cent mortality does not include the collective experience of all New Orleans physicians in the treatment of influenzal meningitis. In addition to several cured cases mentioned in the above text, and others unreported, is the cured case of Isidore Cohn in 1935, an 11 year old boy treated by daily spinal taps, frequent blood transfusions, administration of magnesium sulfate by rectum for dehydration, a dry diet and the use of hypnotic drugs to overcome restlessness.[50]

My two cases were in children six months and 18 months of age. Both gave a history of previous upper respiratory infection, the younger infant having had a paracentesis of both ear drums with little or no suppuration following it. The blood and spinal fluid findings were as usual in these cases. Direct stained smears from the spinal fluid showed gram-negative pleomorphic bacilli. Cultures on tryptose blood agar grew in characteristic dew drop colonies and *B. haemophilus influenzae* were recovered.

The treatment in both cases was: (1) Frequent spinal drainage, and late, in the younger child, cistern and ventricular taps; (2) sulfapyridine, in amount of one grain per pound of body weight in divided doses, was begun as soon as the diagnosis was made; (3) frequent small blood transfusions. The older child was given the blood serum of a donor who had given serum to a recovered case of influenzal meningitis treated but unreported by Socola. (4) Autogenous vaccine was given the younger baby in increasing doses on alternate days.

The six months old baby lived exactly two months and the 19 months baby three weeks after onset. Autopsy on the younger baby showed thickening of the meninges, a thinning out of the cortex, flattening of the convolutions, dilation of the ventricles to four or five times their normal size and containing a large amount of flaky, purulent material. The right lung revealed a grayish patch of bronchopneumonia in the lower lobe. Both liver and spleen gave evidence of toxic inflammation. No autopsy was permitted in the other case.

This total of 18 infants treated with sulfapyridine with five cured, 72.2 per cent mortality, is far too small to justify conclusions. No age was stated in three cases; ten were under two years; two cured cases were under two, another between two and three (table 4).

TABLE 4

PATIENTS WITH INFLUENZAL MENINGITIS TREATED WITH SULFAPYRIDINE

Roche—boy, 17 months; M. & B. 693, L. P., no serum[36]		Cured
Roche—girl, 12 years; M. & B. 693 and proseptasine, no serum[36]		Cured
Hamilton—girl, 2 years; no serum[35]		Cured
Waring—boy, 22 months; no specific serum[23]		Cured
Waring—girl, 6 years		Cured
Waring	Died	
Waring	Died	
Waring	Died	
Aléman—girl, 19 months	Died	
Aléman—girl, 6 months	Died	
Charity Hospital—3 months	Died	
Charity Hospital—11 months	Died	
Charity Hospital—7 months	Died	
Charity Hospital—2 years	Died	
Charity Hospital—2 months	Died	
Charity Hospital—5 months	Died	
Charity Hospital—9 months	Died	
Charity Hospital—5 years	Died	
10 under two years	13 Died	5 Cured*

*Two of the five cures were under two years of age, and a third was between two and three.

Since the fatal termination of my cases, I have learned from John A. Toomey[38] of his four unreported cured cases of influenzal meningitis. Even though the patients were all over four years of age, four

successive cures are decidedly noteworthy. His treatment consisted of one dose of sodium sulfapyridine monohydrate intravenously as soon as the diagnosis was made, followed by sulfapyridine treatment for several days, or longer if necessary. In addition, he used continuous spinal fluid drainage on the Kubie plan[39], small blood transfusions on alternate days, and autogenous vaccine in increasing doses.

The wisdom of continuous spinal fluid drainage is suggested by the warning of L. E. H. Whitby,[40] who says: "It is essential to realize that the sulphonamide drugs will not disperse a collection of laudable pus. The drugs are quite inactive when bacteria are in a medium consisting of pus."

As Jenks and Radbill[6] said: "At autopsy the finding is uniformly a massive and extensive purulent exudate, especially heavy at the base of the brain but often extending in less degree over both hemispheres." It would seem most logical, then, to do a continuous spinal fluid drainage (with continuous hypotonic saline intravenous infusion) in the hope of preventing the accumulation of pus which eventually causes death.

Brown et al.[28] report cure of a case of influenzal meningitis in a six year old child by continuous spinal drainage, mastoidectomy and sulfanilamide; while in 1935, Faust and Stein[41] reported cure of an eleven months' old child by spinal drainage and transfusion. Martmer and Davidson[42] had cured a two months' old baby with influenzal meningitis and spinal block drainage by laminectomy. But here again, as in every method of treatment, we find reports of fatalities. Neal et al.[5] in 1934 stated: "We have employed this method of drainage (Kubie's forced drainage of cerebrospinal fluid) in the last ten cases in our series, with apparent benefit in three of these." But they were not among the cured cases.

It is interesting to note that Calvin J. Weaver[43] describes an apparatus whereby a needle, filed off to allow about ½ inch protrusion, is held in place by a scarf pin guard in reverse position, protected by a metal disc and a rubber kneeling pad cushion, on which he says the "patient can lie with comfort in any position."

THE SULPHONAMIDE DRUGS

Whitby[40] (England), Penington[44] (Australia) and Yampolsky[45] (Atlanta, Ga.) whose respective articles appeared in January, 1940, point out that the various drugs of the sulphonamide group are very closely related in their therapeutic action, although in potency, toxicity and solubility there is some difference. If this is true, we may now add one item to the statistics of the treatment of influenzal meningitis. In 1935, analyzing all reported cures before that time (44 in number) Faust and Stein[41] concluded, "The only common denominator in the treatment of these recovered cases has been repeated lumbar punctures." This rule still holds. But if we consider the cures reported in the last three years which have been treated since the introduction of the sulphonamide drugs, we find an additional common denominator in their treatment, namely, administration of one or more of the sulfphonamide drugs.

Instead of enthusiastically drawing optimistic conclusions, however, it is well to consider that not only the cured cases, but the fatal ones, received varying doses of the same drugs.

Every form of treatment reported in the literature is discounted by those who have seen failures, and by actual statistics where a large number have been reported.

In weighing the benefits of chemotherapy in influenzal meningitis, let us bear in mind that the value of the sulphonamide group seems to be as adjuncts rather than specific form of treatment.

CASE REPORT NO. 1

K. L., six months old white girl, was first seen October 25, 1939. Fever and restlessness were the outstanding symptoms. A few days later, both ear drums were opened and little if any suppuration followed. On November 7, 20 c. c. whole blood were given subcutaneously. The fever had continued and ranged between 100° and 104°. There was marked irritability. Physical examination remained essentially unchanged until November 8, when the neck became stiff and the anterior fontanel tense, when she was admitted to the hospital.

On admission there was a white cell count of 25,250, 89 per cent of which were polymorphonuclear leukocytes; the red cell count was

3,220,000. The white cell count showed a tendency to decrease, but rose again to 26,000 on December 13. Urinalysis was negative throughout. Spinal puncture was done on admission and daily until every attempt at drainage in the lumbar region was unsuccessful. The fluid showed a cell count of 2,500 white cells, most of which were polymorphonuclears, globulin 3 plus, chlorides 470 mg. per 100 c. c. and no sugar. On direct smear many gram-negative pleomorphic bacilli were seen. A culture taken was found positive for *B. haemophilus influenzae*.

Sulfapyridine, 5 grains every four hours, was begun on day of admission. As soon as it could be obtained, autogenous vaccine in increasing doses was given on alternate days. Supportive treatment, consisting of nutritive enemas, blood transfusions and infusions, was used when indicated. X-ray of the mastoids was negative. After sufficient drainage, 5 c. c. of convalescent serum were given intrathecally. Sulfapyridine was discontinued for several days due to vomiting, but was resumed later, and 8 grains given every four hours by rectum.

Spinal tap failing on December 3, a cistern puncture was done and about 35 c. c. of cloudy fluid removed. An attempt to do a third cistern puncture was unsuccessful. By this time the patient had developed a hydrocephalus. Ten ventricular punctures were done, the first on December 5. The next day, 10 c. c. of convalescent serum were injected into the ventricle and this procedure was repeated several times.

During the last week of illness the course was steadily downward. The temperature ranged between 102° and 106°. There was bilateral strabismus and rather marked opisthotonus. Toward the end, muscular twitchings were frequent. Death occurred December 26, 1939.

Autopsy: The anatomic and final diagnoses were: (1) Influenzal meningitis with secondary pneumococcal infection; (2) terminal bronchopneumonia (influenzal and pneumococcal); (3) toxic hepatitis and (4) toxic nephritis. The brain was under marked pressure, the meninges thickened, the convolutions flattened and all the vessels injected. On opening the lateral ventricles both were found markedly distended to about four or five times their normal size. Their contents consisted of turbid fluid with flakes of purulent material. An exudate partly covered the wall of both ventricles. The foramina from the lateral ventricles to the third ventricles were markedly dilated. The third and fourth ventricles were also distended and contained the same character of fluid found in the lateral ventricles although the aqueduct of Sylvius was closed. There was no evidence of infection in the mastoids.

CASE REPORT NO. 2

M. M., a 19 months old white girl, was first seen on the morning of December 29, 1939. During the two weeks preceding the visit, she had a slight cough and cold. On the night of December 28, the child began vomiting and became extremely irritable. Several loose stools with the aforementioned vomiting were attributed to food indiscretion. When seen she had a temperature of 105.8°, was drowsy, and became irritable if disturbed. A generalized convulsion occurred during the examination.

The family history is interesting, in that one brother had completely recovered from meningococcic meningitis three years previously and a cousin from poliomyelitis two years previously, also with complete recovery.

On admission to the hospital immediately following the convulsion, physical examination revealed a well developed female child who cried and became quite irritable when disturbed. The temperature was 105°, pulse 120, and respirations 45. All other findings were normal. The blood showed an 11,750 white cell count, 80 per cent of which were polymorphonuclear leukocytes. The urine was negative.

The following morning the temperature rose to 106°, and vomiting was persistent. Sulfapyridine, grains 4, every four hours, was started. There was slight but definite resistance of her head to anterior flexion. A spinal tap performed that day yielded spinal fluid which had a ground-glass appearance but was not under increased pressure. There were 2,600 cells, 87 per cent of which were polymorphonuclears. The globulin was 3 plus. Many pleomorphic gram-negative bacilli of varying lengths were found on smear. Sulfapyridine therapy was continued. Nutritive enemas, repeated blood transfusions and spinal drainage with injection of blood serum intrathecally were instituted. The donor had previously given his blood to another child who had recovered from influenzal meningitis (Socola's unreported case). By January 6, 1940, the temperature had lowered its range to 100° to 103°. The child seemed more alert and played with her mother. The spinal fluid was clearer, the cell count being 200 with the globulin only slightly increased. Sugar was 58 mg. and the chlorides 687 mg. per 100 c. c.

Three days later, spinal puncture yielded 45 c. c. of slightly turbid fluid under markedly increased pressure. The count was 842. Smear showed an occasional gram-negative bacillus. The culture was reported positive for *B. haemophilus influenzae*.

During the next few days the child seemed to improve somewhat, but on January 14 the fever began ranging between 103° and 105°, and the course was gradually but steadily down grade. On January 20, some twitchings of the hands and body were noticed. The spinal cell count was 250 with a 1 plus increase in globulin. The next day several generalized convulsions occurred and the patient's condition became critical. Muscular twitching continued until the following day, Jan-

uary 22, when the temperature shot to 107°, and the child expired. Permission for an autopsy was refused.

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COORDINATION OF ANTITUBERCULOSIS ACTIVITIES*

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In response to the interest of individuals and organizations, various antituberculosis agencies have grown up around us. With their diverse aims and methods they are like the pieces of a puzzle dumped on a table, scattered or overlapping, leaving big gaps, and, at the same time, covering common areas. There is a growing realization that these activities should be coordinated and fitted together in a plan. This idea comes at a time when all factors are ripe for its accomplishments. The Federal government is working out plans for aid to states in provision for the sick, and, unless something is done locally, may dominate in control. The State government only awaits a feasible plan to do something more definite against tuberculosis. It has laid the foundation in its Board of Health, Tuberculosis Division. The various private agencies are demanding a part in a coordinated, state-wide campaign to control tuberculosis. As in other states, the general medical profession should be aroused to have not only the responsibility for individual cases, but also a voice in the direction which plans for tuberculosis control will take in Louisiana.

We may first recall briefly the evolution of the present anti-tuberculosis activities. Here, as in other countries and states, private sanatoria have been the first to develop. Then public sanatoria have been built, largely due to the stimulus of unofficial agencies, such as the Louisiana Antituberculosis League, the Antituberculosis League of East Baton Rouge Parish, Shreveport, and Monroe. The State has followed by providing beds for the tuberculous in one of these sanatoria and in the Charity Hospitals. At the same time, during the past twenty years, there has been a change from the camp, or health "shack" type of construction to the modern fireproof type of institution which reflects the changing medical opinion as to the best methods of treatment of tuberculosis. The number of beds provided in the State has grown from none to 709. In connection with the hospitals and sanatoria, clinics for tuberculosis have been started to care for the ambulant patients before and after hospitalization. As in other places, it has been found wise to consider tuberculosis as a disease of families or households.

Involving as it does the well-being of entire families, usually in the lowest income groups, tuberculosis calls for care by other agencies. The Department of Public Welfare is called upon, since it has become a principle that the family in which there is a case of tuberculosis needs full financial relief to prevent the development of other cases. Moreover one of the breadwinners is frequently the original victim of the disease. Tuberculosis in the home also calls for the attention of public health nurses in the cities and in the parishes.

THE PRESENT SITUATION

What is the present situation in Louisiana with regard to anti-tuberculosis agencies and facilities?

(A) First, there is a continuing shortage of *beds* for the care of tuberculosis. There are 709 beds as compared with 1,453 deaths in 1938, a ratio of 0.48. The minimum standard is one bed per annual death; and the United States as a whole has 1.4 beds per annual death. The Louisiana State Tuberculosis Commission, consisting of the President of the State Board of Health, the Governor, and seven members appointed by the Governor, administers the Greenwell Springs Sanatorium in East Baton Rouge Parish. This is financed by funds appropriated by the Legislature, presumably from the proceeds of the kerosene tax designated for the care of tuberculosis. The sanatorium has a capacity of 111 patients, most of whom are white. Admission is limited to two patients from each parish except East Baton Rouge. There is a long waiting list (259 cases) and a small turn-

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over (70 admissions and 29 discharges in 1938). Plans have been hastily drawn for a 400 bed addition to this institution. The Tuberculosis Commission does no other work in the State. Two-thirds of the kerosene tax collections have remained unappropriated since its enactment in 1934.

The Charity Hospital of Louisiana at New Orleans has had the Dibert Memorial pavilion of 300 beds for white cases and the Breaux pavilion for 60 colored patients. Until the new Charity Hospital building was occupied, three wards of the Dibert building were used for tonsillectomy cases; all beds are now used for tuberculosis. The former Nurses' Home was to be rehabilitated to accommodate 200 colored patients, permitting the demolition of the wooden Breaux shacks. Lack of funds has recently reduced this facility to 90 beds. Plans are being drawn for a large tuberculosis unit connected with the Chartiy Hospital to be erected on some as yet undetermined site in or near New Orleans. The Charity Hospital also operates tuberculosis clinics for white and colored outpatients in the Dibert and Breaux buildings.

The Charity Hospital of Shreveport has closed its wards to cases of tuberculosis for the past five years. The Pines Sanatorium, with separate establishments for 50 white patients, 16 children, and 50 colored patients, is under the auspices of the Shreveport Tuberculosis League. It is part pay and part free; and it has not been filled to capacity for lack of funds. The G. B. Cooley Sanatorium at Monroe has been recently opened with a full-time medical director and a capacity of 48 patients. This sanatorium is supported by a tax upon property in the Parish. It is under the auspices of the Monroe Tuberculosis League; and it is open only to residents of Ouachita Parish. It already has a waiting list. The Orleans Anti-tuberculosis League Hospital in Gentilly was constructed for 100 beds. It is supported by private charity and the sale of local Christmas Seals. There have never been enough funds to operate this hospital to capacity, to equip it properly, or to finance the debt incurred in building it. The average number of patients is between 30 and 50. There have been no facilities for any treatment except bed rest.

(B) *Clinics* for the after-care of discharged patients, for the diagnosis of new cases, including contact examinations, and, in some instances, for the administration of therapeutic pneumothorax, have developed in connection with all of the above institutions. The Orleans Anti-tuberculosis League with the financial support of the New Orleans Community Chest operates an excellent clinic in Gentilly. In 1939, 2,639 patients made 6,991 visits to this clinic and 237 new cases of tuberculosis were discovered. The nurses from this one clinic made 5,600 home visits in New Orleans during the same year. No pneumothorax cases are handled in this clinic. The Charity Hospital clinics have been instituted within the past two years. The majority of patient visits are for pneumothorax refills, as there are 195 white and 70 colored patients attending these clinics with ambulant pneumothorax. However, 394 new white patients and 181 new colored patients were diagnosed last year in these clinics. At the Touro Infirmary there is a clinic for ambulatory pneumothorax. About 50 patients make 300 to 400 visits annually to this clinic for pneumothorax treatment. A bed is provided for the initial treatment only, or for emergencies that may arise. A similar clinic of approximately the same size is operated at the Flint-Goodridge Hospital for the colored pneumothorax patients.

The Louisiana State Board of Health, in addition to collecting vital statistics on tuberculosis, has put into operation a mobile diagnostic clinic under the direction of Dr. R. Alec Brown. This covers the rural parishes of the State to find cases of tuberculosis. Such a clinic is an essential part of the antituberculosis program. I trust that Dr. Brown will tell us further about its method of operation and the results so far accomplished. Public health units have been organized in 42 parishes. These can very well function in the supervision of cases of tuberculosis in those parishes.

(C) The Department of Public Welfare has undertaken to supply *relief*, in so far as funds permit, to the tuberculous and to their families. They are given the full allowance of relief and usually priority after medical diagnosis and investigation by the Department of Public Welfare worker. While this is admirable in principle, it frequently fails in practice. On the one hand, cases without tuberculosis or with inactive diseases sometimes take advantage of the added relief; on the other, limited funds will not always allow prompt aid to seriously ill patients.

(D) As to the *non-official agencies*, the situation in Louisiana is also chaotic. We annually call upon the public to support two rival Christmas Seals. Due to a disagreement as to policies, the Orleans Antituberculosis League split off from the National and State organization. It devotes the proceeds of its annual "Pelican Seal" sale to the support of the sanatorium under the motto: "Hospitalization is the Best Education." The State organization, the Public Health and Tuberculosis Association of Louisiana, finding its funds grossly inadequate to cover a fraction of the need for beds, follows the policy of the National Tuberculosis Association. The proceeds of its Seal Sale go to education of the public and the medical profession, with concrete measures, such as the annual Early Diagnosis Campaign, direct advertising, and movies of the tuberculin tests in schools.

PLANS FOR COORDINATION

The necessity for a coordinated plan for tuberculosis control in Louisiana is obvious. The problem cannot be met by simply constructing larger hospitals. Certain states which have taken this costly but thought-sparing course have discovered that tuberculosis is a chronic disease. For example, with a waiting list of 500 for the State sanatoria, the provision of 750 more beds did not eliminate the waiting list for more than a year or two. They neglected to provide clinics and nursing services to allow the beds to be used more efficiently as patients were sent home earlier for ambulant care and follow-up. We have no desire to repeat the mistakes of other states and to be saddled with the maintenance of increasing numbers of patients in expensive hospital buildings.

Last year a tentative plan was worked out by a committee of physicians at the request of one of the State agencies. Dr. Perkins has kindly permitted me to draw upon this report for the following outline:

(A) *Direction.* All antituberculosis work of a public health nature should be under the Louisiana State Board of Health. This Board, in turn, should be under closer control by the Louisiana State Medical Society with a special Tuberculosis Committee of the Louisiana State Medical Society to advise it. The present Tuberculosis Commission should be reorganized to supervise all of the public facilities for tuberculosis. The Commission should set up standards for the care of the tuberculous, determine policies, and draw up coordinated plans, undertake epidemiologic studies, and have oversight of all admissions to tuberculosis facilities in the State and their records. It should coordinate the work in this field of the Board of Health, the Hospital Board of the State and the Welfare Department.

Under the Tuberculosis Commission and as its executive there should be a Medical Director or Tuberculosis Comptroller for the State. This should be a full-time man trained in tuberculosis, including hospital and clinic direction, and possessing general organizing and directing ability. This position is the key to the whole problem of coordinating the agencies of the whole State.

(B) *Beds.* Hospital beds for tuberculosis should be distributed through the State on a district basis. This calls for five or six districts; e. g., New Orleans, Baton Rouge, Lake Charles, Alexandria, Monroe, and Shreveport, as logical centers. The parish is too small a unit and the state is too large because of the difficulties of transporting sick patients over long distances. Wherever possible, existing facilities should be utilized. It is estimated that approximately 750 more beds are needed, exclusive of New Orleans, or a total of a thousand more

beds for the State. In addition a definite provision should be made in the general hospitals of each district for a small number of beds for cases undergoing thoracic surgery. Each district hospital with its clinics should be under the direction of a full-time superintendent. There should be one laboratory director for the laboratories of all the tuberculosis hospitals. There should also be a thoracic surgeon retained as consultant to direct or perform the necessary surgical operations in all institutions. At least one district tuberculosis hospital should be a center for training personnel,—physicians, nurses, and attendants.

(C) *Clinics.* Outpatient clinics for diagnosis, examination of household contacts, follow-up and treatment of discharged patients, should be an integral part of the hospital in each district. Where possible, these clinics should be in the buildings of the institution. In places where the hospital is some miles outside of the city, it may be better to have the clinic in town. This necessitates separate provision for treatment (pneumothorax) and at least a fluoroscope for x-ray equipment. In addition to the central clinic there should be outlying weekly or biweekly clinics in other towns more than 25 miles from the center. These would not be for treatment as a rule. For x-ray they might depend upon the facilities of local physicians by arrangement about rates, or refer patients to the district hospital, or utilize visits of the traveling clinics. The staff of each hospital should be responsible for supervising all of the clinics of that district. Properly qualified practicing physicians from the parishes of each district should be appointed as visiting physicians to the hospital and clinics and paid for this work.

At least one traveling chest clinic and possibly two should be maintained under the direction of the Medical Director and a special assistant, the Director of Clinics. This mobile unit, provided with x-ray apparatus, would serve several functions. It would supplement the outlying district clinics in rural areas for case-finding and examination of all pulmonary diagnostic problems referred by the local physicians. It would be used to make tuberculosis surveys of schools, normal schools, and special industrial groups.

(D) *Nurses.* Through the present Parish Health Units, Department of Public Welfare, and local visiting nursing organizations, nurses to maintain contact between the clinics and the patients' homes should be provided. These nurses should attend the sessions of the tuberculosis clinics and carry out the follow-up of active cases and their contacts at home. The nursing staff of each district hospital should, if possible, detail nurses to accompany the physician to each clinic. Each center should be a postgraduate training school for nurses in the bedside care, ambulant care, and public health supervision of the tuberculous.

(E) *Records.* The office of the Medical Director should be provided with files of all cases diagnosed and treated in the State. Such records would serve as the basis for direction of the plan as a whole in the future and for epidemiologic study of the disease in this State. A central clearing house for records would obviate much duplication of effort.

(F) *Relief.* It is recognized that tuberculosis in a household calls for special financial relief in a large percentage of cases. Close cooperation between the Department of Public Welfare and the Tuberculosis Commission is, therefore, necessary in this matter to prevent both neglect of needs and overlapping of unnecessary expenditures. Provision should be made so that future changes in the administration of relief do not cut off assistance to the families of tuberculous patients. In the absence of compulsory hospitalization, some such arrangement is essential to make it possible and advantageous for patients to go under treatment.

SUMMARY

Such a plan for the control of tuberculosis is not a Utopian scheme with no precedent. Other states have set up, or are setting up, similar plans with success. Nor is the money lacking in this State to undertake the planned control of this disease. The saving of money represented by

prevention of disability and restoration of life and working ability is incalculable. An integrated plan, by providing the proper clinics and nurses, will save tremendously in the provision of sufficient beds and allow those now in use and projected to be utilized efficiently. If Federal funds become available for construction, we can guarantee the maintenance. In the kerosene tax and in enabling legislation, we have the necessary sinews of war.

The heart of any successful plan is the man at its center; in this case, the medical director. Careful selection of the right man by a revitalized non-political Tuberculosis Commission prepared to back him up in real control of tuberculosis would be the major step toward attainment of our goal, the coordination of antituberculosis activities in Louisiana. Another opportunity like the present is not likely to occur. The State Medical Society should take action to place itself in an advisory position to the incoming Governor in this matter, as in all pertaining to the health of the people of Louisiana.

DISCUSSION

Dr. R. Alec Brown (New Orleans): This critical review of the present status of tuberculosis agencies and activities in Louisiana leaves no doubt of the need for an improved plan of attack on the problem of tuberculosis control in our state through coordination of activities.

Many of the shortcomings of our state program were listed by Dr. L. L. Lumsden in his report on tuberculosis in Louisiana made in 1936. Dr. Wilson, however, has been more specific in his recommendations and has made it clear that permissive legislation and enabling acts make it possible for the state to carry out the program he has described.

Serving as a state-wide consultant to physicians and health departments in the development of tuberculosis control work, and conducting a travelling consultation case-finding clinic have given me an opportunity to see what advantages could be expected from the suggested plan.

In the first place, welfare department rolls are cluttered with supposed tuberculous patients and their dependents who have never had a confirmatory diagnosis and classification of their disease. Cooperative use of our official case-finding facilities would purge these lists and release much needed funds for legitimate cases of tuberculosis and their dependents.

Using our state clinic facilities for the selection of suitable patients for treatment in our limited sanatorium beds would insure a better type of medical work, and what is more important, would enable a quicker turnover of patients. It is true that for such an ambulatory program to be successful we must develop better facilities for the follow-up care of sanatorium discharged patients.

A state tuberculosis record system would enable an exchange of records between hospitals, clinics, local health departments and would insure far better statistical records on tuberculosis.

In many states a plan of state subsidy for county or district hospitals has made it possible for these smaller institutions to intensify their teaching, case-finding and follow-up programs under the supervision of the state health department.

The need for provisions and facilities for major thoracic surgery is shown by the situation that exists in Shreveport. The local sanatorium there is not equipped with a major operating room and the Charity Hospital refuses to admit tuberculous patients for thoracoplasty work. Several local surgeons will contribute their services for this type of work, but two hundred dollars or more must be raised for private hospitalization for each patient requiring this procedure.

Additional sanatorium beds are certainly needed in Louisiana, but we should first develop a better coordinated tuberculosis program before we ask for these beds.

Dr. Harvey Perkins (New Orleans): In connection with Dr. Wilson's paper, we feel that it will be advisable for this Section on Public Health to present a resolution to the State Society, asking the cooperation and participation of the State Society in this general problem. The resolution reads, as follows:

WHEREAS the control of tuberculosis is a medico-social problem of particular interest to the medical profession and must continue to be guided by the principles of medical practice

AND WHEREAS the combined activities of many public, semi-public and private agencies are required in this control

BE IT RESOLVED that the Section on Public Health and Sanitation of the Louisiana State Medical Society be recorded as urging that there be set up a state-wide Committee on Tuberculosis by the Louisiana State Medical Society

AND BE IT FURTHER RESOLVED that the Committee on Tuberculosis be charged with the duty of acting as an advisory committee to the Louisiana State Department of Health in all matters pertaining to the prevention, care and cure of tuberculosis and that it shall act as a critical authority of the Louisiana State Medical Society in so far as it may be authorized by the Louisiana State Medical Society to do so on all programs and activities of all semi-public and

private organizations or individuals working in the field of tuberculosis.

I request that we act upon this resolution, and that the chairman carry it to the House of Delegates at the meeting on Wednesday to be voted upon by them. I move that this resolution be adopted by this section for presentation to the State Society at the meeting of the House of Delegates.

(Motion put to a vote and carried).

TYPHUS FEVER IN LOUISIANA*

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Typhus fever is a disease which is receiving interest because of the fact that, first observed in this country thirty years ago, it is becoming more and more prevalent throughout the United States. It has been reported from all of the states in the Union except Maine, New Hampshire, Vermont, Rhode Island, Wisconsin, and Michigan. It is becoming more frequently observed not only in the United States, but particularly in the Southern states, involving not only the urban population but also the rural. Slightly over ten years ago the disease was of such rarity that the cases were thought worthy of reporting in the literature; now they are looked upon as an every day affair. As a matter of fact the late Dr. W. C. Rucker reported the first case of typhus fever to arise in Louisiana. I[1] reported the second case of a patient who came into the Charity Hospital in May, 1929. Last year there were 115 cases reported to the Louisiana State Board of Health, Division of Epidemiology. I think this is a very excellent indication of the rapidity with which typhus fever has become an epidemiologic problem and a disease which is becoming rather frequent.

INCIDENCE

The incidence of the disease in Louisiana for the past eleven years was:

Year	Cases
1929	1
1930	0
1931	1
1932	17
1933	11
1934	17
1935	20
1936	12
1937	23
1938	27
1939	115

Probably the best indication of the greater frequency of recognition of this disease and that it is undoubtedly on the increase, lies in the fact that in the Charity Hospital of New Orleans there were only two cases so diagnosed in 1937, in 1938 none, whereas in 1939, in the contagious disease ward, I had the opportunity of seeing 16 cases.

Throughout the world typhus is widely disseminated. According to the United States Public Health Service,[2] of the some 27,000 cases that were reported in 1937 from all over the world, the order of the numerical incidence of the disease was as follows: China, Morocco, Poland, Egypt, Tunisia, Rumania and then comes the United States. In the United States, in 1938, there was a total of 2,294 cases of flea-borne typhus fever officially reported. Many febrile diseases without doubt were misdiagnosed or the cause unrecognized, so that it is quite possible to say in all likelihood there were at least as many more cases again as the total number of cases actually reported. The figures for louse-borne typhus fever, the European and Asiatic types, seem small in comparison to those obtained during the first World War and immediately afterward. It has been estimated that in Russia alone there were 10,000,000 cases of this disease between 1919-22. There were also severe epidemics at this time in Poland, Austria and Germany.

Typhus fever occurs very rarely in the tropics. It is essentially a disease of the colder countries and it occurs most frequently in the winter months in other countries. This is of some interest because Louisiana is a semi-tropical state but the disease is sufficiently serious to have become a public health problem and it occurs both in summer and in winter. However,

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the typhus of the South is entirely the endemic type.

ETIOLOGY

Although typhus fever has always been looked upon as a louse-borne disorder and one which is dependent upon filth, dirt, lack of body cleanliness and the absence of bath tubs, the flea of a rat has become the important vector in the transmission of the disease in the South. This statement is made to impress again the importance of rat extermination and campaigns against the rat to get rid of this objectionable and dangerous rodent. According to Gordon,[3] 90 per cent of endemic typhus in this country occurs in the states of Alabama, Georgia and Texas. Louisiana has been between two of these areas of endemicity and it is to be expected that the disease will still further increase in this state. Another feature of some interest concerning the etiology of the condition is that the negro is rarely infected, the attack rate being only one-tenth of that of the whites. As with nearly all infectious transmissible diseases, males are more frequently affected than females and adults more likely to have the disease than are children.

The seasonal distribution of typhus in the South is rather interesting. By far the greater number of cases occurs in the late spring and early summer. There is a sharp decline by September and a minimum number of cases is observed in March.

THE RICKETTSIAE

Typhus fever is caused by a micro-organism which is known as *Rickettsiae prowazeki*. It might be of some interest to state that the discovery of the rickettsiae as a cause of a specific, self-limited infectious disease, Rocky Mountain spotted fever, was made by Dr. H. T. Ricketts in 1906. At this time he first transmitted the disease to the experimental animal through the bite of the wood tick. Three years later he described the micro-organism from smear preparations taken directly from the blood both of man and of the laboratory animal, as well as in the tissues of the tick. A year or two later, working with Wilder, he demonstrated that Mexican typhus, tabardillo, was transmitted by the body louse and described the rickettsia in this disease. Ricketts and Wilder also showed that Rocky Mountain spotted fever and typhus, while closely allied, are entirely different diseases. Mexican typhus is a serious and often lethal disease.

Ricketts is one of the martyrs to science who have died as the direct result of the investigative work they were doing at the time. He expired in Mexico in 1910 as result of this disease, evidently transmitted to him while working with typhus patients and typhus organisms. The second portion of the name given to the organism that causes typhus belongs to that of a distinguished German-Polish zoologist, von Prowazek.

The rickettsial bodies are small, gram-negative organisms, which resemble bacteria somewhat but which cannot be grown on bacteriologic media and which are found in the body cells of small invertebrate animals, most of which feed upon the vertebrates. These animalculae include ticks, mites, spiders, lice, bedbugs and midges. Strange to say, of all the arthropods, only the bedbug has never been implicated as a vector, that is, a transmitter of the disease. Despite the ubiquitousness of the rickettsiae, there are only three main groups of these diseases; to wit, typhus, Rocky Mountain spotted fever and tsutsugamushi, the first conveyed by the body louse or the rat flea, the second by the tick, the third by the midge. In spite of the widespread infestation of the arthropods (insects), man seems to be singularly fortunate in escaping disease due to these micro-organisms. On the other hand, a very considerable number of animal diseases may result from the transmission of the rickettsiae to the larger animal through the bite of the original host. In the last few years there have been described other diseases of man, Q-fever and Nine Mile fever, for example, which are probably rickettsial diseases. Incidentally, sometimes the Eastern type of this rickettsial disease is spoken of as spotted fever but this term is so commonly and frequently employed for other diseases that it might be well to drop it.

CLINICAL TYPES

There are two distinct varieties of typhus fever. Although the two are alike in many respects, not only clinically but also having complete cross immunity with each other and being serologically identical as judged by the Weil-Felix reaction, there are certain distinct differences. One is transmitted by the louse, the other by the flea. The former, the louse-borne type, is epidemic in nature, while the flea-borne, the murine type, is sporadic, or endemic. Fleas being more common in summer explains the high incidence of endemic typhus in the United States in these months, whereas lice live and breed in winter, consequently epidemics of typhus are more prevalent in the winter months. According to Dyer,[4] the rat is probably the constant reservoir in the southern United States, transmitting the disease to man by the bite of his dissociated flea. On the other hand, the epidemic type is transmitted from man to man by the human louse. There are certain minor distinctions between the strains of the virus isolated in animals in the two types of typhus. This variation is of laboratory rather than clinical interest.

The endemic type of the disease was recognized first in New York by Brill some forty years ago. Nearly all of his cases were found in Jewish immigrants and it was thought then that the disease represented really a variant of imported classic typhus. This idea, subsequently abandoned, was revived by Zinsser in 1934, who believes Brill's disease is not the endemic typhus of the South but an imported form of the typical European typhus which has appeared in the United States in endemic form.

CLINICAL OBSERVATIONS

Endemic typhus has an incubation period of between seven and fourteen days. While there may be irregular prodromata, in the great majority of cases, the disease strikes suddenly with a chill or chilliness, followed by high fever, marked headache and severe prostration. The temperature rises persistently more or less of a step-ladder ascent and obtains its maximum in five to seven days. The fever is continuous, with remission of 1.25° F., the fastigium (or height of the fever) is maintained for approximately a week and then the temperature falls by lysis in about the same number of days it took to ascend to its peak. The course of the disease is usually around two weeks; sometimes it is 16 to 18 days in duration.

The physical examination is relatively important early in the disease. There is present rather pronounced conjunctival congestion, lacrimation and often photophobia. Associated in a markedly prostrated patient who is mentally apathetic, these findings are suggestive. In five to seven days occurs the characteristic exanthem, that is the rash, which is really of supreme diagnostic importance. The physician probably would not recognize the possibility of typhus being present were it not for this rash.

THE ERUPTION

The eruption appears the fourth or fifth day of the disease, although it may be observed on the second day or as late as the tenth. Simultaneously all over the body appear pinkish rose colored spots that are not elevated, that are round and measure 1-5 mm.; they vary in size in diameter from the point of a lead pencil to the size of the rubber eraser at the other end of the pencil. When pressed upon they fade but do not disappear completely. The abdomen, shoulders, back, sometimes the forearms and the thighs may be excessively covered with these lesions or there may be only a relatively few of them. At times the face may be involved but this is extremely exceptional. It is said in the epidemic or European type of typhus the eruption never appears on the palms of the hands or the soles of the feet, whereas the skin expressions are occasionally seen in endemic typhus in these two areas.

It hardly seems necessary to describe the other physical signs to a mixed audience. Actually even to the physician they are of no particular moment.

PROGNOSIS

Fortunately not only are the symptoms of endemic typhus milder than typhoid fever and infinitely more innocuous than epidemic typhus; so also is the death rate correspondingly much less. It is rare that a

patient dies as result of typhus fever. The mortality rate is usually given as being 1 per cent.

Endemic typhus is definitely a problem of the South. In states other than Louisiana many more cases are reported than in our immediate locality. The explanation of this is that the milder winter climate, adequate food supply and failure to rat proof buildings result in a heavy rat population in the South, whereas in the North, on account of the greater cold, the necessity of erecting buildings of concrete and brick to keep out the winter and the lack of food for a rat makes the disease relatively rare there. In so far as is known at the present time, the only possible control of endemic typhus is to cut down or minimize the rat population which carries the flea which bites the man who gets the disease. Continuous combat against the rat by trapping and poisoning should be kept up wherever rats are found in a large number. If the efforts are not kept up continuously, the rats will grow relatively rapidly. They breed readily and increase vividly. Of course the best actual method of minimizing rats is to rat proof the places where rats congregate, breed, live and die. This, however, would be impractical on account of expense. Prophylactic vaccines have been prepared by Zinsser and others which may possibly be available in the open market sometime in the relatively near future.

CONCLUSIONS

Endemic typhus fever is a disease which is increasing in incidence sharply in the South at the present time, less so statistically in Louisiana than in some of the other Southern states, notably Texas, Georgia, and Alabama. It is a disease which may produce severe sickness and occasionally death. It is a disease which can be prevented if and when rats are controlled.

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RUPTURED INFRACLENOID ANEURYSM*

CASE REPORT

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Congenital infraclenoid aneurysms have been reported at intervals for the last fifty years and other cases can be recognized in retrospect, as, for example, the case diagnosed by Cushing as ophthalmoplegic migraine which he later thought to be infraclenoid aneurysm.[1] The confusion is easily understood, for the description of ophthalmoplegic migraine given in the Oxford System of Medicine suggests that the syndrome may often be due to repeated leakages from a small aneurysm.[2]

To date we were able to find in the literature 24 cases of successful ligation of the common carotid artery in infraclenoid aneurysms. This is not to be confused with ligation for fistulous intracranial aneurysm.

SYMPTOMS

There are two groups of symptoms.[3] The first group is caused by pressure of the aneurysm on the adjacent structures, and may include ptosis, ophthalmoplegia, dilated pupils, pain over the ophthalmic division of the trigeminal nerve, projectile vomiting, and sometimes diplopia. The second group of symptoms is due to the leakage of blood following rupture. Immediately after the accident the patient is usually seized with a sudden violent headache, dizziness and vomiting, and may become unconscious. If he survives the acute attack, later symptoms develop, due to irritation set up by the presence of blood in the subarchnoid space; they include pain in the back of the neck, stiffness of the

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neck, and Kernig's sign. An elevation of temperature usually follows the hemorrhage.

DIFFERENTIAL DIAGNOSIS

A large number of conditions must be considered in making the differential diagnosis, including syphilitic meningitis, intracranial gumma, thrombosis of the cavernous sinus, tumors, inflammatory conditions of the orbit, cerebral neoplasms, meningioma of the sphenoidal ridge, pituitary adenoma, Gradenigo's syndrome, and nasopharyngeal malignancy.

Roentgenologic examination is sometimes helpful, but may be misleading. Arteriography, which was introduced by Moniz in 1937, promises to be much more helpful in diagnosing and localizing such aneurysms. Matas[4] has recently stated that he does not believe arteriography to be harmful, basing his opinion on the large number of cases in which the procedure has been carried out without untoward effects. This would seem to be a helpful method of determining definitely that the condition is an aneurysm.

TREATMENT

The treatment of ruptured infraclenoid aneurysm is surgical. The aneurysm may be attacked directly, or the operation may consist of an indirect attempt to induce thrombosis, either through ligation of the internal carotid artery in the neck or by trapping the aneurysm between ligatures placed on the carotid artery in the neck and intracranially. Dandy[5] has recently reported three cases treated successfully by the latter method, cases of successful ligation of the common carotid artery for ruptured infraclenoid aneurysm. Many patients succumb, however, before surgery can be instituted or even before the diagnosis can be made.

The case herewith reported is an illustration of a ruptured infraclenoid aneurysm, congenital in origin, which was diagnosed clinically before rupture and which seems to have been cured by simple ligation of the common carotid artery.

CASE REPORT

Mrs. I. L. J., a white female 28 years of age, was admitted to the ophthalmologic service of Charity Hospital of Louisiana on November 12, 1937. Two months before admission she had begun to have severe temporal and postorbital pain on the right side, together with inability to move the right eye except to the right and a sensation as if the right eye were being pulled to the right. Diplopia was present from the onset of the illness, and the right side of the face felt slightly numb. There were no other symptoms of any sort and no pain on the left side of the face and head or in the left eye. One week before admission to the hospital she had begun to have attacks of vomiting, without nausea or other gastric distress. Five days later ptosis of the right lid developed. The previous history was essentially negative except for a pelvic operation two years before at which she had been sterilized.

Physical examination revealed a well developed white woman, ambulatory and mentally rational, who appeared her stated age. She was 5 feet 6 inches tall and weighed 121 pounds. The only positive findings were in the head and neck.

There was pain and tenderness on deep palpation in the right temporal region. The right eyelid was ptotic. The right bulbus oculi was turned downward and outward and could not be moved in any other direction. The right pupil was dilated and did not react to light or accommodation. The fundus was normal. No abnormal findings were noted in the left eye or eyelid. There was partial anesthesia of the right side of the nose along the distribution of the right ophthalmic division of the trigeminus nerve. The right side of the neck was tender to palpation. On compression and immediate release of the right carotid artery the patient sometimes complained of a shooting pain in the right side of the face.

Examination of the spinal fluid showed no globulin and 150 red blood cells per cubic centimeter. The pressure was 10 mm. Hg. Urinalysis and blood Wassermann reaction were negative and the blood chemistry was within normal range. Roentgenologic examination of the head showed a definite narrowing of the right optic foramen with hyperostosis of the lesser wing of the sphenoid. The impression of the roentgenologist was that the pathology present was a meningioma of the sphenoidal ridge.

Two days after admission to the hospital the patient had what appeared to be a severe apoplectic stroke. She was comatose and markedly cyanotic, the pulse was imperceptible, and the respiration dropped to 5-6 per minute. The blood pressure was 95/60. The neck was stiff and spastic, and the eyes and head were both pulled to the right and tonically fixed. Babinski's reflex was present on the right, and an ankle clonus and Hoffman's reflex were present bilaterally.

The patient appeared moribund and responded only slightly to cardiac and respiratory stimulants and intravenous fluid therapy.

One of us was called in consultation at this point because the diagnosis of infraclenoid aneurysm had been suspected. The patient was seen some three hours after the onset of the acute attack and the diagnosis of ruptured infraclenoid aneurysm was confirmed. At this time spinal puncture revealed bloody fluid without increase in pressure. After several hours the patient's general condition improved, though she did not completely regain consciousness.

Ligation of the right common carotid artery was done November 17, double chromic catgut #3 and umbilical tape being used.

Convalescence was fairly smooth. A temporary left hemiplegia, which had developed rapidly, improved. The patient also complained of severe occipital and cervical pain. She was discharged to her home via ambulance on the eighth day after operation. At this time examination revealed residual weakness of the left leg, oculomotor paralysis, and partial anesthesia of the face. She had frequent headaches but otherwise felt fairly well.

FOLLOW-UP

February 14, 1938 (three months after operation), the patient returned with a draining sinus at the lower end of the incision. A piece of umbilical tape used for ligation was located and removed, after which the wound promptly closed. Examination at this time showed a marked improvement in the right external paralytic squint and the ptosis of the right eyelid. Diplopia was present only when the patient looked to the left. She had no complaints except for a feeling of pressure in the top of her head.

In January, 1940, two years and two months after ligation of the right common carotid artery the patient returned for a check-up. Examination revealed the right pupil to be fixed and slightly larger than the left. The ptosis of the right eyelid was visible only on close inspection, and there was marked improvement in the action of the internal, superior and inferior recti muscles. No squint was apparent, although the patient complained of diplopia when looking to the left. She also complained of numbness in the right side of the face and a sensation of pressure in the top of the head, but otherwise was perfectly well. No abnormal peripheral reflexes were present. Roentgenologic examination of the skull failed to show the narrowing of the right optic foramen and the hyperostosis of the lesser wing of the sphenoid observed at the previous examination.

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THE WAR SITUATION AND THE MEDICAL PROFESSION

The very great military power shown by the German forces has resulted in a situation which has placed the United States in an equivocal position. Ostensibly and actually the sympathy of the great majority of the American people has been on the side of the Allies. This frequently expressed feeling that the Allies should be the victor has undoubtedly resulted in irritating the Germans. Furthermore, the United States has given help to the Allies in many ways.

Many other factors are of equal or greater importance than the antagonism which definitely exists between the Germans and the majority of American citizens. This continent is vulnerable. The Monroe Doctrine has been a heritage of our government for one hundred and seventeen years. We may get into trouble with the Germans if we maintain this doctrine. No matter what may be the cause of a possible war, which we hope will not eventuate, this country stands closer to war at the present time than it has stood since the epoch-making days of 1917-1918.

It behooves this country to be prepared. It is absolutely essential that the medical profession does its part. Plans have already been prepared by the Surgeon General's office which will mobilize the medical profession but only with their help and co-operation. These plans, which were presented at the recent meeting of the American Medical Association, in general called for what is believed to be the most efficient way of taking care of the soldiers and of the general population. In general, the parish and county medical societies are to be the nuclei from which men will be called into service. The parish medical societies will probably be asked to organize committees which will help a central committee in selecting those men who best are able to leave their homes, families and practice. It is intended to obviate the difficulties that arose in the last war, when certain communities were shorn of their medical men. Due to these smaller committees, localities will not suffer. Through these central committees appropriate men for appropriate positions will be selected. The roentgenologist will not be asked to operate, nor will the surgeon or dermatologist be asked to take care of neuropsychiatric patients, as happened in the last war.

The details of this comprehensive plan for the care of the patients at home or in the army will be presented in a short time to the parish medical societies. It should

be borne in mind that for the plan to be a success it will be necessary for all to cooperate. Many a man who would be anxious to go, to join the army, will have to remain behind. It must not be forgotten that on his shoulders will be placed double work. He who remains behind will be called upon for unstinting labor and hard work; to the man who goes the possibility of being killed in action or getting sick or maimed. Under any circumstance the medical profession, in the event of war, will be called upon for self-sacrificing efforts, but for the immediate present, action must be taken quickly and all physicians must work together wholeheartedly and cheerfully.

SOCIALIZED MEDICINE

Recently there has appeared a book entitled "Frontier Doctor" written by a practitioner of medicine in central Oregon, reciting his experiences thirty-five years ago in the town in which he lived, some 120 miles away from the nearest railroad. This very interesting book gives a most fascinating description of the author's experiences. Particularly pertinent in view of the present day desire by a small group of people who do not know what they want is his philosophic discussion of some of the problems of practice, of the patient, and of the doctor. Coe* writes that thirty years ago the family doctor was the first man that the average person resorted to in time of trouble for help and sympathy. He is the one best qualified to give advice. The doctor knows more about the medical, moral and physical make up of patients than any one else. There is an intimate relationship between the doctor and the patient, one founded on trust. He says that "it was and still is the finest thing I know" but sadly he recounts that this is likely soon to disappear. The tendency toward regimentation of medical practice tends to destroy it and it has already been destroyed in the principal European countries where nowadays the patient is treated as a number instead of a human being.

*Coe, Urling C.: Frontier Doctor, New York, Macmillan Company, 1939. Pp. 264.

As result of socialized medicine in Europe and freedom of practice in this country, America has rapidly forged ahead of the non-democratic countries in the medical sciences and in the scientific care of the sick. This is particularly true in the very important field of prevention of disease. In the more than three decades that this practitioner of medicine has been taking care of the ill and injured, he says he has never known or seen a person who needed medical care who did not get it. He differs with those who say that one-third of the people in this country do not get adequate medical care. In this lower income group there is more sickness; this is because the people lack proper food, clothing and housing. The Government should see that the lower one-third is properly fed, clothed and sheltered before starting in to change methods of practice. He says that no layman or group of laymen knows enough about the science of medicine or its practice to pass intelligent laws to govern it. He says, furthermore, that so much time is spent in paper work that in France, for example, a doctor who is a fast writer has to spend a minimum of fourteen minutes to do all the clerical work that each patient requires.

These expressions of opinion are penned by a man who has been in practice for many years. He cannot be accused of being a proponent of the American Medical Association because he is not even a member of the organization. He does, however, represent the practicing physician in the country and his sentiments are those of the great bulk of the medical profession. They are presented here merely to show how the average man in practice for many years feels about the threatened socialization of medicine and how he, as do most doctors, feels that it would be injurious to patients, to medicine as a whole and especially to the practice of medicine.

HYPERTENSION AND OBESITY

Every practicing physician knows that in the man who is overweight there is more likely to exist hypertension than in he who

is lean. This has been corroborated repeatedly in clinical studies. Taking any group of hypertensive individuals, overweight would be three times more common than underweight. Furthermore, if the stout patients reduce to a normal weight the blood pressure often is materially lowered. In spite of these observations it cannot be shown that obesity does produce hypertension; a thin man is often found with hypertension and on the contrary there are stout men who have low blood pressures. As Robinson* points out, the most that can be determined from these findings, statistical and clinical, is that in some way obesity probably aggravates an inherited predisposition to hypertension. It may not be the obesity itself; it may be there is simply some alteration in metabolism associated with obesity that aggravates latent hypertension.

Robinson, appreciating that body build is definitely related to weight and blood pressure, attempted to evaluate the weight factor and the build factor in their relationship to hypertension. A large group of patients was studied, something over 3000 men and over 2000 women. These patients were divided into groups: the slender linear, that is the long, thin type, and the lateral, the thick, broad type, further divided into marked and minimal. Without going into the details of these studies, suffice it here to say that the conclusions that are drawn by this author are of some moment, particularly his final conclusion that obesity plays a very minor part in hypertension. On the other hand, body build is of extreme importance. It is closely correlated with hypertension. The thick, broad chested person shows the greatest incidence of hypertension and the lowest incidence of hypotension. On the other hand, obesity is undoubtedly intimately connected with body build. The lateral, broad chested type of body configuration results in overweight in more than one-third of all people. On the other hand, the linear type of man is one-tenth as likely to be overweight as is the broad chested person.

In spite of the fact that Robinson believes that body build, regardless of weight, determines in a large part the predisposition of any person to hypertension, the fact remains that if the man of this type does gain weight and becomes overweight he is likely to develop a high blood pressure. It would behoove the slender or linear type of person to cease worrying about high blood pressure but the broad chested lateral type of individual continuously should be on his guard to prevent himself from becoming overweight with its tendency to produce increased blood pressure, diabetes and other less specific causes of ill health that develop from midlife on to old age as a result of overeating, if the fat person survives to this later period.

*Robinson, S. C.: Hypertension, body build and obesity, Am. J. Med. Sci., 199:819, 1940.

HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

TRI-STATE HOSPITAL, INC.
Shreveport

The Staff of the Tri-state Hospital held its regular monthly meeting May 9, 1940, with 21 members present. Dr. W. P. Butler called the meeting to order and the scientific program was then presented.

Dr. M. D. Hargrove presented the case of a white male, aged 21, who entered the hospital first on March 18, 1940, with history of cough, cold, pain in chest, fever and chills. Examination revealed temperature 103°, dulness over upper lobe of left lung, left sided lag, no rales or bronchial breathing. Total white blood count 26,700; polymorphonuclears 83 per cent. A diagnosis of lobar pneumonia was made and sulfapyridine therapy instituted. The sputum could not be satisfactorily typed because of previous sulfapyridine treatment. An x-ray showed a dense shadow throughout the entire left lung field. Aspiration on two occasions yielded several hundred cubic centimeters of straw-colored fluid which contained pus cells but no organisms. Following this he improved slowly and left the hospital on March 29. An x-ray two weeks later showed the same dense shadow present in the left chest. He was readmitted April 19, after

which the course was slowly downward, and he expired on May 7. Autopsy revealed two separate tumor masses, one in each pleural cavity and separate from the lungs. Microscopic section of the masses was being done. The case was discussed by Drs. C. R. Gowen, O. O. Jones, P. R. Gilmer, Knoepp and W. P. Butler.

Dr. W. S. Kerlin presented the case of a white male, aged 50, who in June, 1939, had been in the hospital, at which time a diagnosis of tuberculosis of right lung and of the cecum was made. On this admission the history was one of bloody diarrhea for several weeks. Repeated transfusions were of no avail. He was operated on and an ileocolostomy performed. Postoperative course to date has been free of any bloody diarrhea. The case was discussed by Drs. P. R. Gilmer and C. R. Gowen.

Deaths of the previous month were then discussed. The hospital report was read and approved.

E. W. Booth, M. D., Sec.

HUEY P. LONG CHARITY HOSPITAL

Pineville

At the staff meetings of the Huey P. Long Charity Hospital, clinico-pathologic conferences were held and the following cases were presented for the month of May. These conferences are held under the supervision of Dr. O. W. McFarland, Superintendent, and Dr. John C. Connell, Staff Pathologist.

1. A case of a colored male, 74 years of age, with acute retention of urine. Physical examination revealed the fundus of the bladder palpable to the level of the ureter and a marked hypertrophy of the prostate. The blood pressure was 220/150. Blood chemistry showed NPN 42 and glucose 190. The following diagnoses were made: Hyperplasia of the prostate gland with acute retention of urine, hypertensive cardiovascular disease and uremia.

A suprapubic cystotomy was done and a catheter was left in place. The urine was very bloody and remained so. A cystostomy was then done which revealed a punctured lobe of the prostate with uncontrollable bleeding. The patient went into a state of shock and expired several hours after operation.

Postmortem examination revealed a marked hyperplasia of the left lateral lobe of the prostate which had been punctured by the trocar. Dr. Connell pointed out the apparent cause of death and discussed the relative infrequency of such a marked hypertrophy of the lateral lobe as compared with the median bar.

2. The case of a negro male, 58 years of age, who was admitted to the hospital after the sudden onset of intractable pain radiating from the epigastrium to the neck. This pain was of several hours' duration and had been partially alleviated with morphia before admission. The blood pressure was 180/114. The pulse was regular, with a rate of 70. The heart was enlarged downward and to the left. A loud systolic murmur was heard over the apex. An admitting diagnosis of hypertensive cardiovascular disease and dissecting aneurysm of the abdominal aorta was made.

At postmortem examination there was found a dissecting aneurysm of the aorta with rupture into the left pleural cavity.

3. A case of a white male, 7 years of age, whose present illness began two weeks ago when suddenly, while playing, he became unconscious. He recovered somewhat though remaining in a semi-conscious state and had definite muscular weakness over the left side of the body. Physical examination showed a palpable mass in the right upper abdominal quadrant and weakness in the upper and lower extremities. Because of extreme restlessness reflexes could not be elicited.

Postmortem examination showed bacterial endocarditis with cerebral embolism involving the right lobe. There was also primary carcinoma of the liver. Dr. Connell commented upon the rarity of primary carcinoma of the liver during the first decade of life.

4. A case of a negro male, 65 years of age, who came to the hospital in a comatose condition and was not able to give a history of his illness. Physical examination showed the heart and liver to be slightly enlarged. Laboratory findings were as follows: Total red blood cells 4,000,000; white blood cells 47,300 with 93 per cent neutrophils; blood chemistry NPN 133, creatinine 2, glucose 181; agglutinations negative for typhoid-paratyphoid group. A clinical diagnosis was made of uremia. Postmortem diagnosis was that of uremia, bilateral hydronephrosis and hydroureters. There was also lobar pneumonia involving right lower lobe.

5. A case of a white female, 67 years of age, who was admitted to the hospital with a diagnosis of arteriosclerotic heart disease with congestive failure, ascites and edema of the lower extremities. Shortly after admission the abdomen became distended and there was generalized tenderness. The liver was also enlarged and tender. The patient presented a picture of "acute abdomen."

At autopsy there was found carcinoma of the ascending colon with generalized metastasis. There was rupture of the colon into the peritoneal cavity with generalized peritonitis.

6. The case of a negro female, 50 years of age, who gave a history of a slowly growing tumor on the ventral surface of the foot on the medial side of the first metatarsal bone. The tumor was first noticed one year ago but did not cause any symptoms until she received slight trauma over this area three weeks before admission, tenderness then became so marked that she could not bear weight on this foot. Roentgen ray examination was

negative for bone or joint pathology. The tumor was excised with much difficulty. It was about 4 cm. in diameter and had many fibrous extensions. On microscopic examination this tumor proved to be a sarcoma arising from a tendon sheath. Since the tumor was of a slow growing type it was decided to treat this case conservatively. The patient is to receive deep x-ray therapy and return to the outpatient clinic for observation in order to determine whether or not amputation is to be done at a later date.

7. The case of a negro male 7 years of age, who came to the hospital complaining of pain, of about two months' duration, below the right knee joint with associated swelling and tenderness. Radiologic findings were suggestive of bone sarcoma. A biopsy was taken from the right tibia which on microscopic examination showed periosteal osteolytic sarcoma. High amputation of the thigh was advised.

All of these cases were discussed pathologically and clinically with special emphasis on the mode of treatment.

Wendell H. Cook, M. D., Sec.

GRADUATE SCHOOL OF MEDICINE LOUISIANA STATE UNIVERSITY MEDICAL CENTER

New Orleans

At the meeting held in June, 1940, Dr. John H. Connell presented the following paper:

MORE MALIGNANT CHANGES OCCURRING IN CELL CARCINOMA

Basal cell carcinomas commonly termed rodent ulcers are generally considered to have a definite course. They usually are defined as slow growing tumors of the skin, arising from the basal layer of epithelium, which progress locally and invade surrounding tissues, never metastasizing to distant foci.

Their histologic appearance is usually quite regular. The tumors are composed of small round polygonal cells with deep staining nuclei in faint cytoplasmatic structures. Their staining characteristics and morphology closely resemble the basal layer of the epidermis. Mitotic figures are relatively infrequent. Local invasion can be noted into the cuticular layer or into the deeper underlying structures.

In the course of studying a large number of such tumors clinically and histologically, it has become more evident that they do not always follow such an outlined course. Rapid growth, recurrences and metastases have been noted; histologic variances are frequent.

In a recent survey of 200 cases of basal cell carcinoma, the following facts were ascertained: These tumors are predominant in those individuals having a fair complexion; not, however, to the extent as the primary squamous cell carcinoma. These tumors are more prevalent in the white than in the colored race. They frequently are multiple, appear on any part of the body, more commonly in the region around the face. Recurrences have been found in 21 per cent of the cases, such recurrences appearing from six weeks to as long as four and one-half years.

Definite histologic deviations were noted in many of these tumors. The occurrence of mixed varieties of cancers wherein squamous and transitional cell varieties were apparently arising from, or in conjunction with the basal cell, occurred in 16 per cent of the cases. The malignancy noted in some such instances was of a fairly high degree and of the variety expected to metastasize to distant foci.

In attempting to correlate the clinical and pathologic irregularities, certain facts became apparent. The method of treatment definitely affects the course of the tumor. Those tumors which primarily were simple basal cell carcinomas, but inadequately treated, frequently showed at some subsequent period a tumor taking on more malignant characteristics. It is significant that the great majority of the recurrences were in those patients who were treated by the cautery. Other recurrences showed themselves where radiation therapy was inadequate or when surgery was necessarily limited.

The more malignant characteristics noted clinically were: Rapidity of growth; deeper extension and metastases. Histologically the change represented enlargement of the malignant cells, nuclei becoming hyperchromic, mitoses more frequent and the tendency for the formation of pearls significant of a squamous variety of carcinoma.

In conclusion, it may be stated that basal cell carcinoma, unless primarily adequately treated, may enter the category of more malignant neoplasms and metastasize to distant foci.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR

July 1. Clinico-pathologic Conference, Hotel Dieu, 8:15 p. m.

July 2. Eye, Ear, Nose and Throat Staff, 8 p. m.

July 3. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
Mercy Hospital Staff, 8 p. m.

July 4. Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

July 8. Orleans Parish Medical Society, 8 p. m.

July 9. Eye, Ear, Nose and Throat Society, 8 p. m.

July 10. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
Touro Infirmary Staff, 8 p. m.

July 11. New Orleans Hospital Council, Charity Hospital, 8 p. m.

July 15. Hotel Dieu Staff, 8 p. m.

July 16. Charity Hospital Medical Staff, 8 p. m.

July 17. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
Charity Hospital Surgical Staff, 8 p. m.
The Orleans Tuberculosis Hospital Staff, 8 p. m.

July 18. Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

July 19. New Orleans Dispensary for Women and Children Staff, 8 p. m.

July 23. Baptist Hospital Staff, 8 p. m.

July 24. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
French Hospital Staff, 8 p. m.

July 25. Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

July 26. L. S. U. Faculty Club, 8 p. m.

July 31. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.

During the month of June, the Society held one regular scientific meeting, at which the following program was presented:

1. Biographical Sketch: David French Boyd, a Louisiana Educator
   By invitation....Mr. William Dosité Postell
2. Interesting Case Report: Polyradiculoneuritis (Guillain-Barré)
   By.....Dr. Gilbert C. Anderson
3. Special Report: Studies on the Bleeding Tendency and Vitamin K Therapy in Newborn Children
   By .....Dr. Henry Leidenheimer, Jr.
   To open discussion.....Dr. Rupert Arnell
4. Symposium on Chemotherapy:
   Pharmacology and Toxicology
   By .....Dr. E. E. Nelson
   Chemotherapy of Acute Infections
   By.....Drs. J. O. Weilbaecher, Jr., Homer Dupuy, and H. M. Taylor
   Present Status of Chemotherapy in Urology: A Clinical Evaluation
   By.....Drs. H. W. E. Walther and R. M. Willoughby
   Peritonitis
   By.....Dr. M. L. Michel, Jr.

The following physicians were elected to membership in the Society: Active—Drs. Abe Golden, Bruno F. Mancuso, and Paul W. Renken.

The Secretary reports with regret the loss of Dr. A. A. Keller, one of the Society's active members.

NEWS ITEM

With the issue of May 24, "The Tiger," which was the official organ of the students of the School of Medicine of Louisiana State University since 1932, was discontinued. Next year a monthly publication, to be known as "The Journal of the School of Medicine of Louisiana State University" will be substituted for it. The new periodical will be edited by the students under the direction of an advisory board of faculty members.

The following members were elected to office in the New Orleans Graduate Medical Assembly for the year 1940-1941:

Drs. Val H. Fuchs, president; F. E. LeJeune, first vice-president; D. J. Murphy, second vice-president; D. N. Silverman, third vice-president; W. H. Gillentine, treasurer; J. S. D'Antoni, secretary; H. Theodore Simon, director of clinics, and James K. Howles, assistant director of clinics; Drs. O. W. Bethea, Edgar Burns, L. C. Chamberlain, Emmett L. Irwin, and J. H. Musser, members of the executive committee.

All officers of the New Orleans Pure Milk Society were re-elected at the annual meeting held at Touro Infirmary, May 6: Dr. Roy E. de la Houssaye, president; Dr. E. A. Socola, vice-president, and Mr. Robert H. Polack, secretary-treasurer. Dr. W. C. Rivenbark was elected assistant-secretary.

Beginning June 1 the Library will be open from 9 a. m. to 5 p. m. on Mondays through Fridays, and from 9 a. m. to 4 p. m. on Saturdays. This schedule will prevail until October 1. Physicians unable to come to the Library during the day may telephone their reference needs to Miss Marshall (Magnolia 2741) and material will be left at the information desk on the first floor, to be picked up at the physician's convenience.

Dr. A. L. Levin was a guest speaker of the New Mexico State Medical Society at its annual meeting in Albuquerque, May 27-29. The subject of his discussion was "Clinical and Gastroscopic Studies of Interest in the Diagnosis and Treatment of Peptic Ulcer."

Dr. W. H. Perkins presided over the Baby Health Bill meeting held in New Orleans, May 21. Addresses were delivered by Drs. Walter Levy and

Eugene B. Vickery. Drs. C. P. May and E. F. Salerno were also present.

Dr. A. E. Fossier was elected to honorary membership in the History of Medicine Society of the Tulane University of Louisiana School of Medicine at a recent meeting. Drs. Conrad Collins, R. S. Munger, J. H. Musser and Alton Ochsner were elected as faculty members.

Dr. A. L. Levin presented a paper before the National Gastroenterological Society in New York City, June 4, on "The Importance of Gastroscopy as a Diagnostic Procedure."

The City Hospital for Mental Diseases observed the twenty-ninth anniversary of the institution's founding with a party at the hospital on May 15. Staff members attending were: Drs. G. F. Roeling, F. R. Gomila, C. Grenes Cole, George Hauser, M. T. Van Studdiford, Emmett Irwin, Spencer McNair, and P. H. Jones.

Dr. Alton Ochsner gave a paper on "Phlebothrombosis" before the Erie County Medical Society on June 5.

Drs. Michael DeBakey and Alton Ochsner presented a paper on "Carcinoma of the Esophagus" at the meeting of the American Association for Thoracic Surgery, held in Cleveland, June 6-8.

A paper on "The Analysis of Comparative Skin Reaction by Means of the Chi-square Statistic" was presented at the Texas Allergy Association, May 13, by Dr. B. G. Efron.

Drs. Maxwell E. Lapham, C. C. Bass, Roy H. Turner, W. A. Sodeman and Grace A. Goldsmith recently attended out-of-state meetings of medical societies.

Dr. G. J. Taquino recently attended the meeting of the American Otological, Rhinological and Laryngological Society in New York City.

Dr. Isidore Cohn recently addressed the Texas Railway and Traumatic Association at Dallas. His subject was "Wound Treatment."

Drs. Walter Levy and Barrett Kennedy were guest speakers at the quarterly meeting of the Tri-county Medical Society at Tylertown, Miss., June 11. The title of Dr. Levy's talk was "Postpartal Infection"; Dr. Kennedy spoke on "Common Skin Diseases and Their Treatment."

Dr. Neal Owens spoke before the Sociedad Nacional de Cirugia in Havana, Cuba, on June 13. The subject of his talk was "Management of Burns and Defects Arising from Burns."

Dr. Isidore Cohn attended the meeting of the American Association for the Surgery of Trauma, in the Atlantic City on June 7-8. Dr. Isidore Cohn addressed the National Gastroenterological Association in New York on June 6. The title of his talk was "Cooperation between the Surgeon and Gastroenterologist."

Dr. W. H. Perkins represented the state at the thirty-sixth annual meeting of the National Tuberculosis Association in Cleveland, June 3.

Dr. Val H. Fuchs has been elected to membership in the American Laryngological Society.

Drs. Edmund Connely, Martha W. MacDonald, T. A. Watters, and Erwin Wexberg attended the meeting of the American Psychiatric Association in Cincinnati, May 20-24.

The initial meeting of The Circle, undergraduate honor society of the School of Medicine of Louisiana State University, was held on May 14 in the auditorium of the Nurses' Home of Charity Hospital. An address was made by Dr. Urban Maes, Director of the Department of Surgery, which dealt with the special responsibilities of students who are selected for membership in such organizations. Keys were presented to the seven fourth year and the three third year students who comprised the charter member group. Dean Burns made the presentation.

The fourth year membership is limited to the upper tenth of the class and the third year membership to the three highest ranking students. The advisory committee from the faculty consists of Dean Burns and Dr. J. D. Rives.

Dr. E. C. Faust was selected for honorary membership in the Eugene Field Society, a national association of authors and journalists, in recognition of the literary skill and craftsmanship of his works. Dr. Faust is best known for his book on "Human Helminthology."

LIBRARIAN'S REPORT

During the month of May 75 volumes have been added to the Library. Of these 40 were received by binding, 14 from the New Orleans Medical and Surgical Journal and 21 by gift. Notation of new titles of recent date is appended to this report.

The Library has loaned to physician 1,118 volumes during the month, or approximately two to each member of the Society. An additional 814 volumes have been loaned to students for overnight use, giving us a total circulation of 1,932 for the month. These figures do not include the use of

books and journals within the reading rooms, of which no accurate record can be kept.

Members of the staff have collected material on the following subjects during the month at the request of physicians:

Psychobiological studies following section of the corpus callosum

Recent reviews on poliomyelitis

Hemospermia

Primary uterine sclerosis

Vitality of spermatozoa in relation to sterility

Prostigmin in myasthenia gravis

Dermoid cysts

Renal function tests

Physiology of the kidney

Hospital admissions

Intern administration within the hospital

NEW BOOKS

American Association on Mental Deficiency: Proceedings and Addresses, 1935-38.

American Laryngological Society: Transactions, 1939.

American Otological Society: Transactions, 1939.

Anderson, M. E.: Cancer of the Breast and Cancer of the Uterus, 1939.

Cowdry, E. V.: Problems of Ageing, 1939.

Directory of Medical Specialists compiled by the Advisory Board for Medical Specialties, 1939.

Feder, J. N.: Essentials of Applied Medical Laboratory Technique, 1940.

International Congress of Military Medicine and Pharmacy: Report, 1939.

Kugelmass, I. N.: Newer Nutrition in Pediatric Practice, 1940.

Niemoeller, A. F.: Complete Guide to Bust Culture, 1939.

Northwestern University Medical School: Industrial Medicine Symposium, 1939.

Packard, E. N.: Artificial Pneumothorax, 1940.

Power, Stephen: Surgical Diagnosis, 1939.

Robey, W. H.: Health at Fifty, 1939.

Societa Medico-chirurgica Della Roma: L'intradermareazione per la Diagnosi Biologica Dell' Echinococco Umano, 1938.

Titus, Paul: Management of Obstetric Difficulties, 1940.

Trueta, H.: Treatment of War Wounds and Fractures, 1940.

U. S. Department of Agriculture: Food and Life, 1939.

U. S. Census Bureau: Vital Statistics, 2v., 1937.

U. S. P. H. S. Officers Association: Transactions, 1939.

Walthers, Waltman: Diseases of the Gallbladder and Bile Ducts, 1940.

Wiener, A. S.: Blood Groups and Blood Transfusion, 1939.

Wright, C. E.: Manual of Dermatology, 1940.

TREASURER'S REPORT

Bank balance, April 30, 1940	$5,415.76
May credits	348.47
Total credits	$5,764.23
May expenditures	834.63
Actual book balance, May 31, 1940	$4,929.60

Edwin L. Zander, M. D., Sec.

LOUISIANA STATE MEDICAL SOCIETY NEWS

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
East Baton Rouge	Second Wednesday of every month	Baton Rouge
Morehouse	Second Tuesday of every month	Bastrop
Orleans	Second Monday of every month	New Orleans
Sabine	First Wednesday of every month	
Second District	Third Thursday of every month	

NEW ORLEANS GYNECOLOGICAL AND OBSTETRICAL SOCIETY

The regular meeting of this organization was held conjointly with the clinical staff of the Southern Baptist Hospital, May 28, 1940. The scientific program included the following presentations: "Report of a Case of Bicornate Uterus with Transverse Presentation" by Dr. E. L. King, discussed by Dr. George Mayer; "Uterus Didelphic with Case Presentation" by Dr. P. E. Prouet; "Preliminary Report on Extensive Fibroid Study" by Dr. W. E. Levy, discussed by Dr. Peter Graffagnino.

AMERICAN MEDICAL ASSOCIATION MEETING

Some of the physicians from Louisiana who attended the meeting of the American Medical Association in New York City were: Drs. Donovan C. Browne, I. M. Gage, Sam Hobson, E. L. King, Maurice Lescale, D. N. Silverman, Frederick Vaughan, Rufus H. Alldredge, J. M. Bamber, J. A. Danna, John F. Dicks, Michael DeBakey, A. L. Levin, Emma S. Moss, Louis A. Monte, J. H. Musser, Louis Ochs, Alton Ochsner, Walter Otis, John T. Sanders, Narcisse F. Thiberge, Carl J. Tripoli, Charles A. Bahn, Elizabeth Bass, Guy A.

Caldwell, Conrad G. Collins, B. J. DeLaureal, George H. Hauser, George W. McCoy, M. D. Teitelbaum, H. R. Unsworth, T. A. Watters, of New Orleans; Drs. W. H. Browning, H. G. F. Edwards, A. A. Herold, W. R. Mathews, J. S. Shavin, of Shreveport; Drs. G. T. Gallaspy, J. Q. Graves, A. D. Tisdale, of Monroe; Dr. Louis Weinstein, of Breaux Bridge; Dr. P. H. Fleming, of St. Martinville, Dr. W. F. Couvillion, of Marksville; Dr. O. O. Antony, of Alexandria; Dr. M. R. Green, of Ruston; Dr. C. C. Blakeney, of St. Francisville, and Drs. V. E. McMains and B. E. Spencer, of Sterlington.

The 1940 Graduate Fortnight of The New York Academy of Medicine will be held October 14-25, 1940. The subject of this year's fortnight is "Infections." The purpose of the fortnight is to make a complete study and authoritative presentation of a subject of outstanding importance in the practice of medicine and surgery.

The Academy provides this program for the fundamental purpose of medical education; consequently all members of the medical profession are eligible for registration. A complete program and registration blank may be secured by addressing: Dr. Mahlon Ashford, The New York Academy of Medicine, 2 East 103 Street, New York City.

The Michael Reese Hospital, Chicago, is offering a course in electrocardiography for two weeks beginning August 19. The fee for the course is $100.00.

The next written examination of the American Board of Obstetrics and Gynecology will be held January 4, 1941.

The American Social Hygiene Association, Inc., is interested in obtaining information concerning the intravenous drip method of treating syphilis. They have requested that physicians and hospitals who are carrying out this procedure give them information as to the type of case being treated, name of drug or drugs used, number of days treatment, and other pertinent facts. The association, on the other hand, will be glad to answer inquiries regarding this form of treatment of syphilis. A pamphlet on the subject may be obtained from the Social Hygiene Association, 50 West 50 Street, New York City.

AMERICAN COLLEGE OF PHYSICIANS

The twenty-fifth annual session of the American College of Physicians will be held in Boston, with general headquarters at the Statler Hotel, April 21-25, 1941. Dr. James D. Bruce, of Ann Arbor, Michigan, president, will have charge of the program of general scientific sessions. Dr. William B. Breed, of Boston, has been appointed general chairman of the session, and will be in charge of the program of clinics and demonstrations in the hospitals and medical schools and of the program of panel and round-table discussions.

AMERICAN CONGRESS OF PHYSICAL THERAPY

The nineteenth annual scientific and clinical session of the American Congress of Physical Therapy will be held at the Statler Hotel, Cleveland, Ohio, September 2-6, 1940. This year there will be a departure from the usual arrangements in that the mornings will be devoted to an instructional seminar with the scientific program presented in the afternoons and evenings. The entire instruction schedule is elective in character; registrants may pursue only the individual courses they desire. The scientific program consists of papers, demonstrations and motion pictures covering every branch of physical therapy. For further information write to the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago.

NEWS ITEMS

Dr. Ambrose H. Storck recently attended a meeting of the Surgeons' Club which was held in Chicago.

Dr. Isidore Cohn was guest speaker at the meeting of the Third District Medical Society at Lafayette, Louisiana, on June 27, 1940.

There is an opening for a physician in Vidalia, Louisiana. Details may be secured from Dr. John Schreiber of that town.

The U. S. P. H. S. has announced that they have a series of films illustrating various public health problems. For example, "Choose to Live," a two reel film on cancer control, may be purchased at the cost of printing, namely $14.68. It is possible also to obtain this film on loan. Details of the films may be secured from the U. S. P. H. S., Washington, D. C.

INFECTIOUS DISEASES IN LOUISIANA

For the twentieth week of the year, which came to an end May 18, there were reported to the Bureau of Epidemiology of the Louisiana State Board of Health 229 cases of syphilis, 40 of gonorrhea, 39 of pneumonia, 35 of pulmonary tuberculosis, 25 of cancer, 24 of whooping cough, and 14 of measles. No other reportable diseases exceeded ten in number. The following week, closing May 25, there were listed 156 cases of syphilis, 54 of whooping cough, 42 of pneumonia, 31 of cancer, 27 of tuberculosis, 13 of influenza, and 11 of gonor-

rhea. During this week there was a case of poliomyelitis reported from Orleans Parish, one of typhus fever from Pointe Coupee, and one of undulant fever from Orleans. For the twenty-second week, which ended the first of June, syphilis again pushed to the forefront with 148 cases listed. This disease was followed by three important respiratory tract infections: pulmonary tuberculosis, with 53 cases reported, pneumonia with 51, and whooping cough with 48. There were listed also 31 cases of cancer, 19 of influenza, 17 of gonorrhea, and 15 of malaria. A case of smallpox was discovered in Claiborne Parish, one of poliomyelitis in Orleans, and one of typhus fever in St. Martin. For the twenty-third week of the year, there were tabulated 158 cases of syphilis, 44 of pneumonia, 30 of cancer, 29 each of gonorrhea and pulmonary tuberculosis, and 14 of influenza. Another case of poliomyelitis was reported from Orleans Parish. A case of undulant fever was reported from the same source and typhus fever from Lafayette and Ouachita parishes, one each. For the week which closed June 15, 111 cases of syphilis were reported, followed by 76 of whooping cough, 70 of pneumonia, 30 of pulmonary tuberculosis, 26 of cancer, 15 of gonorrhea, 11 each of malaria and typhoid fever, and 10 of scarlet fever. It is interesting to note the large number of patients suffering from pneumonia, and this in spite of the fact that the summer season was present and there had been a long dry spell. The typhoid fever cases were scattered throughout the state, Lafayette and Vermilion parishes leading with three cases each.

HEALTH OF NEW ORLEANS

The Department of Commerce, Bureau of the Census, reported that for the week closing May 11 there were 149 deaths in the City of New Orleans, 91 white and 58 negro. Fifteen of these were in children under one year of age and two-thirds of these deaths were in negro children. For the week ending May 18, the death rate was static, two fewer deaths beings recorded in the city than in the previous week, one less in each of the two races. However, there were only eight infant deaths. Quite a sharp drop occurred during the week of May 25, 116 deaths being listed, apportioned 72 white and 44 negro; there were only three infant deaths. Figures for the week of June 1, dropped back to those of the two previous weeks before the sharp drop: 147 deaths were reported, 84 in the white and 63 in the negro population. There were eight infant deaths practically all of which were in colored children. During the week of June 8, 121 deaths occurred in the City of New Orleans, largely due to the fact that only 32 negroes died that week, whereas there were 89 white deaths, about the usual number. There were only four deaths in children under one year of age.

SOME STATISTICS SHOWING DECREASE IN MORTALITY IN CHILDREN UNDER 12 YEARS IN FOUR DECADES

The following interesting study was presented to President-elect King Rand by the Rev. W. S. Slack, now a retired clergyman in Alexandria. It is presented to the State Medical Society not only because it is enlightening, but because of the thought-provoking personal observations of a prominent clergyman:

On March 8, 1896, I began my ministry in the Episcopal Church in Louisiana. With the exception of the three and a half years spent in Columbus, Miss., this ministry has been spent in Louisiana. From 1896 until 1902 I was in charge of the country missions at Rosedale, Maringouin, Melville, Lecompte, Washington, and Opelousas, with occasional visits to Bunkie and Marksville. In February, 1902, I moved to New Orleans, taking charge of Mt. Olivet Church (Algiers), but for several years retaining the work at Bunkie and Marksville in addition; when I released this work, I took up that in Plaquemines Parish "down the river," at Buras, Daisy and Dime (these latter places today are non-existent, being within the Bohemia spillway). Leaving Algiers, I moved to Columbus, Miss., and took charge of St. Paul's Church on February 1, 1914, and was rector there until September 1, 1917. I removed to Alexandria, La., as of date September 15, 1917, where I remained until I retired on December 1, 1937, but was in charge intermittently until the middle of the next year. During the last fifteen years of my ministry in Alexandria, I had charge of the missions at Boyce and Lecompte, and was always at the beck and call of any place without the ministrations of the Episcopal Church, so that my records are composite in their entirety. While resident in Columbus, Miss., I had, during my vacation in 1915, charge of the work of the Episcopal Church in the Canal Zone as acting-chaplain at the Ancon Hospital and other points. While there I buried some 45 or more negroes who died in that hospital; as I was given only their names and not ages, these burials are not included in these statistics. I had no way of finding out their ages.

The Canons of the Episcopal Church require its ministers to keep an accurate record of all official acts, such as baptisms, confirmations, marriages and burials; this record I have kept most assiduously, not only in the registers of the places where such an act took place, but in my own private register as well, for I soon found it advantageous so to do. At present this register is kept in the safe in the diocesan headquarters, 709 Louisiana Building, New Orleans.

For some time I had been impressed by the decreasing percentage of funerals of children under twelve years of age; accordingly, when on a visit to New Orleans, I carefully went over the record

of all funerals I had since the beginning of my ministry in 1896 to within a month ago. I found that the percentage had decreased from 8 out of 12 in 1897 to 0 out of 43 in 1936; these were exceptional years, though it is of record that I had no such funerals during 1913, 1916, 1917, 1930, and 1934 as well.

It might prove tedious to give the annual record, so I am giving it by decades, and a single item for 1936-1937:

Years	Total deaths	Children under 12	Percentage
1896-1905	126	21	16.67
1906-1915	220	20	9.09
1916-1925	219	15	6.85
1926-1935	270	13	4.81
1936-1937	75	2	2.67
	910	71	7.80

(Among these deaths I recall one white man, a Finn, 105, and a negro, 110 years of age, and a goodly number in their nineties.)

In other words, in the first score of years of my ministry I had 346 burials and of that number 41 were children of 12 years or younger, practically 11.85 per cent; in the second score it had fallen to 5.73 per cent, less than half of the first; while in the last two years of my active ministry the percentage had fallen to less than one-half of what it had been the second score, one-quarter of what it had been the first score and around one-sixth of that of the first year of my ministry.

To what can this decrease be ascribed? As a layman, I would say to (1) prenatal care, (2) more careful nurture of the young children, and (3) preventive medicine. I leave the answer to the medical profession.

WOMAN'S AUXILIARY

Louisiana State Medical Society

President—Mrs. Roy Carl Young, Covington.

President-elect—Mrs. Aynaud Hébert, New Orleans.

First Vice-president—Mrs. Joseph E. Heard, Shreveport.

Second Vice-president—Mrs. W. A. Ellender, Houma.

Third Vice-president—Mrs. M. H. Foster, Alexandria.

Fourth Vice-president—Mrs. C. P. Gray, Monroe.

Treasurer—Mrs. M. C. Wiginton, Hammond.

Recording Secretary—Mrs. P. A. Donaldson, Reserve.

Corresponding Secretary—Mrs. Herbert Cannon, Covington.

THE PRESIDENT'S MESSAGE

Greetings to My Auxiliary Members:

In accepting the leadership of this organization I realize it is my greatest privilege and my greatest responsibility. The able women who have preceded me as president of this Auxiliary have kept well in mind our rightful position, that we are an Auxiliary organization. The task of carrying on their work has now been placed in my hands, the responsibility of its fulfillment rests most heavily upon me and impels me to call on every member for the utmost in cooperation and assistance.

In your community and in mine, the Auxiliary has served to develop a more friendly feeling between physicians and between the families of physicians, and has brought about a realization of the fact that we have a common goal. It is my hope that during the coming year the membership of this organization may be greatly increased. We ought to remember that the wife of every doctor affiliated with the Louisiana State Medical Society should be a member of this Auxiliary. Let the slogan this year be "Every Member Pledge One New Member."

To those of you who were not with us in New Orleans, I want to say that it was a grand meeting. Reports of the growth and accomplishments of our organization were truly inspiring. Much credit is due the Convention Chairman, Mrs. James W. Warren, and the President of the Orleans Parish Auxiliary, Mrs. Aynaud Hébert, and their co-workers for a most delightful convention.

Mrs. Roy Carl Young, President.

THE ANNUAL MEETING

The Women's Auxiliary to the Louisiana State Medical Society enjoyed a most successful meeting in New Orleans. The registration exceeded that of all years gone by.

A luncheon held at Arnaud's opened the social side of the meeting. This was called our Americanism luncheon, the color scheme being red, white, and blue. Mrs. Rogers Brewster supervised the ceremony in her own gracious manner. Dr. King Rand, the new state president-elect, and Dr. C. Grenes Cole, the incoming president, gave inspiring talks and stressed appreciation of the Auxiliary in its association to the Society. The musical program consisted of spirituals sung by negro university students. This completed a very enjoyable day.

The supper dance given by the State Society in the Mirror Room at the Roosevelt Hotel was a magnificent affair, with a good meal, good music, and a splendid floor show. The great number attending had a most enjoyable evening.

The annual meeting was held at the Orleans Club following a real southern breakfast. Mrs. S. M. Blackshear presided in her same gracious manner and held the attention of an extremely large attendance throughout the meeting. Mrs. Charles Raymond Hume gave the address of welcome with Mrs. Erwin Gill, of Shreveport, responding. Many matters of importance were discussed. Each parish president gave interesting reports of the year's activities, bringing forth

many novel ideas in carrying on their philanthropic endeavors. The highlight of the meeting was the ceremony of presenting the pins to past presidents by Mrs. A. D. Tisdale, of Monroe, who deserves much credit in preparing so interesting a paper on the work of each past president.

The only sad moment was the "In Memoriam" honoring our two departed members, Mrs. H. W. E. Walther, of New Orleans, and Mrs. Valentine Simmons, of Shreveport, who passed on during the year. Large bouquets of red roses were brought in during this ceremony by little Elise Silverman and Yvonne Lacroix. These flowers were sent to the family of Mrs. Walther who was a past president of the State Auxiliary.

The election of officers concluded the meeting and Mrs. Aynaud Hébert, of New Orleans, was named president-elect. I want to take this means of extending congratulations to Mrs. Hébert from every member of the Woman's Auxiliary to the Louisiana State Medical Society.

The final note of the convention meeting was the tea at the Pontalba honoring Mrs. Roy Carl Young, the incoming president. This was a most outstanding event.

Enough credit cannot be given Mrs. James W. Warren and her very fine committee for the manner in which she so ably handled this meeting.

Mrs. Jules Myron Davidson

Respectfully submitted,
Mrs. Jonas W. Rosenthal,
Press and Publicity Chairman.

BOOK REVIEWS

Health Insurance with Medical Care; The British Experience: By Douglass W. Orr, M. D., and Jean Walker Orr. New York, The Macmillan Co., 1938. Pp. 271. Price $2.50.

In conducting their survey of The British Experience with National Health Insurance, reported in this valuable, readable source book, Dr. and Mrs. Orr had the wit to go, for their information, to those most concerned, to the people themselves, —the rank and file of physicians, to workmen and members of their families,—all of whom seemed to be greatly pleased with the scheme. This comprehensive investigation was made by the authors with the view that their findings might contribute something of value to the discussion and solution of America's national health problems.

The Orrs found the National Health Insurance project in England imperfect but vastly useful and promising. Even though the Government contributes to the expense and imposes an administrative setup which exercises certain controls, medicine, under the British plan, is social rather than socialized. National Health Insurance is compulsory for all wage earners or one-third of England's population. Its cost to each worker is about ten cents a week which covers the services of general practitioners but not specialists' fees or hospital charges and only employed persons are entitled to benefits. Choice of so-called "panel" doctors is allowed and they may be changed if dissatisfaction arises; there have been surprisingly few such changes. Since the "panel" doctors may also be the private physicians to the unemployed members of a family, it is unlikely that they will do careless work.

The authors reached the conclusion that National Health Insurance can and does work and that the British method of procedure is not understood in America. It would do much to clarify the situation in this country if every member of the American Medical Association became acquainted with Great Britain's experience.

A study of this excellent treatise will encourage those who believe in a program for public health maintenance in the United States and will reassure those who fear for the destruction of the traditional doctor-patient relationship.

The Honorable David Lloyd George's impassioned gestures, in his campaign to legalize National Health Insurance in England, were significant and predictive. The American people have yet to deal, on a major scale, with the vital issue, —the problems of illness and disability and adequate, inexpensive medical care.

C. P. May, M. D.

Priests of Lucina: By Palmer Findley, M. D., F. A. C. S. Boston, Little, Brown & Co., 1939. Pp. 421. Price $5.00.

The author of this book is Professor of Obstetrics and Gynecology (Emeritus) at the University of Nebraska and has delved deeply into the history of obstetrics. The present volume derives its title from the goddess of child-birth, Juno Lucina, and consists chiefly of a series of biographical sketches of those who have been responsible for the fundamental advances in the field of obstetrics. Primitive (as one may say) prehistoric midwifery, is first discussed, then the obstetrical practices of the Orient. Next, the author begins his biographical sketches, appropriately enough, with Hippocrates, followed by reviews of the work of Soranus, Galen, and the Arabians. In sequence we read of the lives and achievements of the masters

of all countries, terminating most fittingly with a sketch of the outstanding American master, Dr. J. Whitridge Williams. Then follows a history of special phases of obstetrics, anatomy, the forceps, and puerperal fever.

This work presents in a very clear and interesting manner the story of the development of the art and science of obstetrics. It is a veritable mine of information, and is of the greatest interest to the obstetrician and to the medical historian. It belongs in the indispensable class, as far as workers in these fields are concerned. The author's clear and lucid style adds greatly to the interest of the presentation.

E. L. KING, M. D.

Clinical Pathological Gynecology: By J. Thornwell Witherspoon, B. S. (Princeton), B. A., and M. A. (Oxon), M. D. (Johns Hopkins). Philadelphia, Lea & Febiger, 1939. Pp. 400. Price $6.50.

As a review for practitioners, or an introduction of gynecologic pathology to the medical student, this book correlates the clinical aspects of each pathologic condition. The more recent classification of ovarian tumors is given with adequate description of treatment.

Commercial preparations of the hormones are listed as well as dosages of the preferable ones, giving information found in very few texts.

Admittedly an incomplete text because of the omission of chapters on fundamentals, the author has nevertheless furnished a background for the study of gynecologic diseases in an interesting manner. The gross and microscopic illustrations are excellent.

EUGENE H. COUNTISS, M. D.

Physical Signs in Clinical Surgery: By Hamilton Bailey, F. R. S. C. (Eng). Baltimore, The Williams and Wilkins Company, 1940. Pp. 310; illus. 377. Price $6.50.

This is an excellent and well illustrated volume with information condensed as much as possible. It will be an addition to the library of any surgeon. It is designed primarily to be of assistance to men who are confronted with a wide variety of surgical conditions and it obviously is not intended for use of the specialist.

Problems in diagnosis are discussed in such a way that the man who has at his command all of the facilities of the laboratory will be aided as well as the surgeon in the country who must depend largely on his own powers of observation.

The author has identified the men after whom various signs are named by a brief footnote. For example: Scarpa, 1747-1832, anatomist and surgeon, Venice. It is very doubtful that any physician can read this book without adding materially to his knowledge of surgical diagnosis.

In the introduction this significant quotation appears: "If it is a question of doubt in diagnosis, you may often observe that one man solves the doubt when the others could not, and the way in which one man happened to solve it is this: he applied to the diagnosis of the case some method of examination which others had not applied."

Many of the illustrations are taken from photographs and a number are in colors. These latter add much to the value of the book.

EDWARD A. FICKLEN, M. D.

Sexual Disorders in the Male: By Kenneth Walker, F. R. C. S., and Eric B. Strauss, D. M., F. R. C. P. Baltimore, Williams and Wilkins Company, 1939. Pp. 242; illus. Price $3.00.

The collaboration of an urologist and a psychotherapist makes this book quite different from the usual monograph on this subject. The authors have attempted to approach a complex group of related disorders with a comprehensive viewpoint, since they appreciate the interplay of anatomic and functional factors which so frequently confound the clinician who is faced with a problem of this type.

Although both medical and surgical therapy is described, the greater value of this work probably lies in those portions devoted to psychopathology, for here one will find numerous keys to the solution of obscure problems. The book contains many case reports illustrative of the particular phase of disorder under consideration. Since these case reports are rather typical, they should be of great value to the reader who encounters similar cases. An interesting characteristic of this valuable little treatise is the tendency on the part of both authors to question the rationale of some of the therapeutic measures which heretofore have been applied empirically.

The book is written primarily for the general practitioner rather than for the specialist. It is, however, this reviewer's opinion that the specialist will find it well worth his while to read the volume.

IRVING J. GLASSBERG, M. D.

Blood Groups and Blood Transfusion: By Alexander S. Wiener, A. B., M. D. Springfield, Illinois, Charles C. Thomas, 1939. Pp. 306. Price $5.00.

Since the appearance of the first edition of this book in 1935, considerable progress has been made in the knowledge of blood groups and the practice of blood transfusion. In this second edition the author has included these advantages.

The subject of blood groups is presented in a thorough and comprehensive manner. Particular consideration is given the medico-legal and forensic aspects. Undoubtedly this is the most exhaustive,

up-to-date, and authoritative exposition of blood groups that has been compiled. Unfortunately the section on blood transfusion does not approach this high standard, a criticism which also applied to the first edition. Thus, for example, only 2½ pages are devoted to the consideration of preserved blood, a subject which in the past several years has become increasingly prominent. Moreover, the statement made on page 88 that the tube method of transfusion was "introduced" in this country by a certain author is incorrect as this method had been described by at least three different authors several years previously. However, in spite of these minor criticisms, the book is a valuable and standard work in this field.

MICHAEL DEBAKEY, M. D.

A Short Story of Cancer of the Breast and Cancer of the Uterus: By Marion Ellsworth Anderson, A. B., M. D. Clinton, Ohio, Author, 1939. Pp. 106. Price $1.00.

In this pamphlet of 102 pages many excellent gross and microscopic pictures of carcinoma of the breast and uterus are given. There are also several diagrams to illustrate points the author wishes to stress.

The purpose of this pamphlet, as given in the introduction, is to emphasize the importance of these two conditions to general practitioners, and, secondarily, to registered nurses. The material presented is a very brief review of the literature on this subject, coupled with liberal references to standard texts of pathology, and, to a certain extent, with the author's own experience. There is nothing new in the brochure and little of practical value. While the author stresses the importance of surgery, radium, and x-ray therapy, he also mentions, without sufficient condemnation, various injection treatments. The methods of diagnosis are mentioned very briefly and without sufficient emphasis.

From this pamphlet, the chief impression to be gained is that cancer is a terrible disease—a generally accepted belief.

JOHN C. WEED, M. D.

Diagnostic Signs, Reflexes and Syndromes (Standardized): By W. E. Robertson, M. D., F. A. C. P., and H. F. Robertson, B. S., M. D., F. A. C. P. Philadelphia, F. A. Davis Co., 1939. Pp. 309. Price $3.50.

This is a handy and useful compilation of diagnostic signs, reflexes and syndromes. The authors have attempted to gather and standardize for the first time the indications for the various diagnostic signs, reflexes and syndromes, as well as the first standardization of what constitutes them. This book is a valuable and real contribution to medical literature. While minor criticisms as to some of the indications and occasional sins of omission and commission are to be found, and will probably be the basis of a new edition at a later date, this book is recommended as useful and valuable, as well as being the first handbook on the subject.

B. B. WEINSTEIN, M. D.

Population, Race and Eugenics: By Morris Siegel, M. D. Hamilton, Ont., Author, 1939. Pp. 206, Price $3.00.

This small volume is devoted to a study of three circumscribed subjects: population, race and eugenics. Although the material of each is comprehensive, the treatment indicates that obviously it is not intended particularly for the medical profession. Indeed, the medical man may question several of the statements made. In general, however, the author steers a straight, sane, middle course, presents an array of scientific statistics and data from which sound conclusions are drawn. There is nothing profound in the exposition, no original advancement in practice or theory.

The chapter on race is the best in the book and is interesting especially in view of the current farcical argument in Europe. Dr. Siegel goes to great length to prove that the theory of Nordic superiority is only a myth, that it gained footing through distortion of scientific facts for political aims, and that such false theories have led in the past and are leading at present, to super racial arrogance and to wars and bloodshed.

The rest of the volume contains the usual observations on rational marriage, the feebleminded, and restrictive measures, including sterilization. Although the effort towards solution to such profound problems is sincere, likely this volume will add little actual knowledge to the shelves of a medical library.

R. S. MUNGER, M. D.

As the Twig is Bent: By Leslie B. Hohman, M. D. New York, MacMillan Co., 1940. Pp. 291. Price $2.50.

This is a meritorious book by an author who is a distinguished authority in the ever widening field of the investigation into, and the management of, behavior problems of children and counselling others concerning them.

Dr. Hohman looks upon adolescence as a normal phase of development through which all children pass. He believes that all children acquire undesirable habits and personality traits which are to be regarded as normal reactions to environmental situations and which do not, necessarily, in any way stamp a child as being abnormal, but in certain instances, overemphasized reaction

trends require corrective measures to prevent their becoming actual maladjustment impairments. It is in the application of preventive and remedial measures that the child needs to be thoroughly understood and its parents encouraged and adequately educated.

In many respects this volume should be a valuable and distinct aid to thoughtful parents, teachers, doctors, nurses, and those who are engaged in training and educating adults and children and in handling the numerous complexities which arise when efforts are made to secure for each child a maximum of health, both mental and physical. Especially outstanding and well written chapters are those on "Bad Habits Live on Dividends," "Illness—Real and Otherwise," "The Inside Story of Attractiveness," "Girlish Boys and Boyish Girls," and "Your Child's Future Is in Your Hands."

The author is entitled to much praise for his work since it contains a host of readily adaptable suggestions and is characterized by accuracy, clarity, completeness, common sense and absence of sensationalism. Those who follow his recommendations will achieve thoroughly satisfactory results in their endeavors.

C. P. MAY, M. D.

Treatment by Diet: By Clifford J. Barborka, B. S., M. S., M. D., D. Sc., F. A. C. P. Philadelphia, J. B. Lippincott Co., 1939. Pp. 691. Price $5.00.

Dr. Barborka's book represents a rather successful attempt to meet the need of the practicing physician for a quick reference book on diets needed in everyday practice. The plan of the book is such that the diets for use in various disease states are of easy access; furthermore, diets are outlined in both weights and household measures, and sample diets are given. This makes it simple for the physician to familiarize himself with any particular diet as well as to explain it to the patient. Extreme diets that have appeared in the literature from time to time have not found a place in this book, for which Dr. Barborka is to be congratulated.

We highly recommend it for the use of the practicing physician.

ROBERT C. LOWE, M. D.

Laboratory Manual of the Massachusetts General Hospital: By Francis T. Hunter, M. D. Philadelphia, Lea & Febiger, 1939. Pp. 119. Price $1.75.

The chief merit of this little handbook is conciseness. Originally intended as a pocket outline of the routine laboratory work done by interns in the Massachusetts General Hospital, this third edition contains succinct descriptions of nearly all modern tests and procedures commonly employed in any hospital. There are chapters on examination of specimens, collection of specimens, special diagnostic procedures (e.g., liver function tests, pneumo-encephalography), therapeutic technics, and prophylactic measures. An appendix lists normal values for blood and blood chemistry and cerebrospinal fluid. There is, however, no information whatsoever on the principles of these tests, on the basic indications and interpretations thereof. For this reason the book likely will prove too constricted and incomplete either for reference or practical use by students and practitioners alike. But for its use as originally intended, as a laboratory outline for the intern in the hospital, the book is highly commendable.

R. S. MUNGER, M. D.

Ten Years in the Congo: By W. E. Davis. New York, Reynal and Hitchcock, 1940. Pp. 301. Price $2.50.

Davis spent ten years as a medical missionary in the Belgian Congo, and uses this book for a sketch of some of his keen observations, excellent characterizations, impressions and activities. It is written in a similar vein to Victor Heiser's recent book but with much less self-consciousness and braggadocio.

The Congo adopted Davis and has become a part of him. He ably paints clear, sometimes beautiful, picturesque and memorable portraits of that country, its people, and his medical experiences. The accounts of his surgical and obstetrical experiences are most interesting, and one is especially impressed by the vivid, sympathetic, and graphic descriptions he has given of native practices, particularly of obstetrics.

His sympathetic understanding of the natives and his description of some of them, "half children, half philosophers," with whom he came in close contact is noteworthy.

This is not another travel book. It is not just another doctor's memoirs. It is a fresh, witty, humorous, slightly too "slangy," but always interesting account of a people and a region too little known in medicine and literature.

B. B. WEINSTEIN, M. D.

PUBLICATIONS RECEIVED

Columbia University Press, New York City: The March of Medicine, Number IV of the New York Academy of Medicine Lectures to the Laity.

S. B. Debour, Chicago: Differential Diagnosis in Internal Medicine, by Prof. Dr. Med. O. Naegeli.

Harvest House, New York City: Handbook of Hearing Aids, by A. F. Niemoeller, A. B., M. A., B. S. Complete Guide for the Deafened, by A. F. Niemoeller, A. B., M. A., B. S.

The Johns Hopkins Press, Baltimore: Malaria and Colonization in the Carolina Low Country, 1526-1696, by St. Julien Ravenel Childs.

Lea & Febiger, Philadelphia: The Foot and Ankle, by Philip Lewin, M. D., F. A. C. S. Obesity and Leanness, by Hugo R. Rony, M. D. Physical Therapy for Nurses, by Richard Kovács, M. D.

The Macmillan Company, New York City: Biochemistry of Disease, by Meyer Bodansky, Ph. D., M. D., and Oscar Bodansky, Ph. D., M. D.

The Medico-historical Press, Boston: Life and Letters of Fielding H. Garrison, by Solomon R. Kagan, M. D.

W. B. Saunders Company, Philadelphia: Clinical Heart Disease, by Samuel A. Levine, M. D., F. A. C. P. A Textbook of Pathology, by W. G. MacCallum. Neoplastic Diseases, by James Ewing, A. M., M. D., Sc. D., LL. D.

The Williams and Wilkins Company, Baltimore: A Synopsis of Surgery, by Ernest W. Hey Groves, M. S., M. D., B. Sc. (Lond.), F. R. C. S. (Eng.). An Index of Treatment by Various Writers, edited by Sir Robert Hutchison, Bt., M. D., LL. D., P. R. C. P., assisted by Reginald Hilton, M. A., M. D., F. R. C. P.